

Managing Issues That Arise During Construction

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On a construction project of any significant size, managing and monitoring the work is critical to success. The owner's team must ensure that the work is constructed as shown on the drawings and as required by code. The design team must respond to the contractor's questions, must review proposed products and materials to ensure they are correct for the project, and will likely need to issue changes to the drawings. The owner's team must ensure that work is proceeding according to schedule, that work is complete before the contractor is paid, and that subcontractors and suppliers are being paid for their work.

Managing all of these issues can be a complicated task that requires many different skills, and owners frequently hire a construction manager to provide assistance. The first step is to **read the contract**. The contract is the source of most of the parties rights and obligations to each other and its terms will govern the outcome of almost all of the issues that may arise during the project.

A. Project Controls: Schedules, Schedules of Values and Submittals

1. Schedules And Project Delays

Almost every construction contract sets a start date, either in the contract itself or by allowing the owner to issue a Notice to Proceed, and a duration, that is, the number of days required to complete the work. But getting the work done within the contract time requires sequencing of the major and minor steps required, which requires a schedule.

Public works contracts typically require the contractor to maintain a project schedule reflecting critical path management principles. The contractor typically prepares an original schedule at the outset of the project, and updates that schedule during construction to reflect construction progress. The schedule will generally show a work plan meeting the public owner's required completion date, broken down by separate work "activities," with milestones, logic and start/finish dates.

Public owners and contractors typically use the project schedule for several different purposes:

- As a communication tool during the project;
- As a control tool and as a tool to manage change; and,
- As a tool to support their positions with respect to construction claims for time delay, acceleration, disruption and impact related costs.

This section provides a management level overview of Critical Path Method (CPM) scheduling, schedule preparation, schedule liability or schedule claims. Several excellent texts exist that provide a detailed exposition of scheduling issues, that the reader may wish to consult

for reference.⁴⁴¹

2. Common Types of Schedules

We illustrate scheduling concepts at a very general level in this manual to provide the public entity and the practitioner with a brief overview and a basis to understand the schedule discussion often found in reported case decisions and as used on the construction project.

Bar Charts. Bar charts, or Gantt charts, can be used to graphically show the sequence of events for a construction project, including the necessary duration of each task required. Bar charts are helpful in organizing the discrete tasks required to complete the project – for example, drilling piers, setting rebar, and pouring concrete – and identifying the likely duration for each task:

Bar charts have some significant limitations in project planning, because they do not show the necessary sequential relationship between certain activities that cannot take place until another task has been completed. For example, the second floor cannot be built until the first floor is complete; the paint cannot be applied to the walls before the drywall is hung and taped. They also may not be used to show the impact of change on the project and are not a good tool for communication and management of the project.

For this reason, bar charts are commonly seen only on smaller, less complex projects. Despite their limitations, bar charts may be accepted by a court as proof of a claim for project delay.⁴⁴²

Bar Charts Utilizing CPM Logic. The planning problem posed by a simple bar chart is addressed on very simple projects by using bar charts that incorporate CPM logic. On very simple projects, bar charts utilizing CPM logic may be utilized. An example is the hypothetical bar chart for construction of a house shown in the appendix.

Critical Path Schedules. A network based schedule (or a “CPM”) is a graphical representation of a project that shows the various activities from start to finish. The sequence and logic of the work is depicted in the “network.”

Critical path schedules include the necessary dependencies between construction activities, along with the required duration, sequence, and logical endpoints or milestones for completion of portions of the project. In general terms, a critical path schedule separates out those tasks that can be performed without affecting other work on the project, and those tasks that cannot be performed until prior work is complete.

By separating the tasks into these two general categories, a scheduler can identify the

441. An excellent text on construction scheduling, with a relatively comprehensive national overview of federal and state case law. *Construction Scheduling: Preparation, liability and claims (Wickens, Driscoll et al.)* 2d Ed. (Aspen Publishing 2003).

442. *Howard Contracting, Inc. v. G.A. MacDonald Constr. Co.* (1998) 71 Cal.App.4th 38, 51-53 (but note that the bar chart scheduled used for the proof did identify the project’s critical path).

project's critical path.⁴⁴³

In order to develop a critical path network, a contractor will generally follow four basic steps:

1. The contractor develops a list of construction "activities." Usually, these consist of discrete work items.
2. The contractor estimates the durations, measured in days, that each work activity will require.
3. The contractor establishes the relationships between the activities, i.e., what activities must be performed before the activity can start (referred to as a "predecessor"), and what activities can only be performed after the activity is finished (referred to as a "successor" activity.)
4. Based on the above three basic calculations, the contractor generally uses commercially available software to develop the "network", perform the calculations, and produce the "CPM" schedule showing the project duration, the project's critical path and activities, and the "flow" for various activities.

The core of a CPM schedule is its identification of work activities, their duration, their relationship to other work activities, and the resources necessary to complete them. Understanding these "building blocks" will greatly assist the public works owner and/or contractor in understanding schedules, delay issues and their resolution.

Work activities affecting construction progress will generally break into one of the following five categories:

- Administrative (permits, change orders, RFI's).
- Mobilization (field setup, fence, utilities, general conditions).
- Procurement (submittals, fabrications, shipment and delivery).
- Construction (see immediately below).
- Systems testing, start-up, and turnover.

Very often the CPM schedule at issue will address construction activities in detail, but possibly omit other activities affecting construction, such as procurement. For example, in the house network, the HVAC work shown on the project schedule likely requires timely procurement of the equipment and the owner's approval of the equipment selected, but this "procurement" activity is usually not reflected on the schedule.

443. *S&S Cummins Corp. v. West Bay Builders, Inc.* (2008) 159 Cal. App. 4th 765, 771 (quoting from *Haney v. United States* (1982) 676 F.2d 584, 595).

Construction “work activities” will comprise the majority of activities on the average CPM building schedule. Construction work activities will often be categorized based upon different types of work, specifically the following:

- Different items of work, e.g., foundation, HVAC, framing, drywall, etc.
- Location of the work, e.g., per floor, per building, per job site.
- Trades doing the work, e.g., electrical, plumbing, drywall.
- Timing of the work, e.g., “rough electrical” v. “finish electrical.”
- Means and methods, such as cranes, scaffolding, etc.

As the contractor updates the schedule to show progress, the contractor may omit certain work activities that affect construction progress but does not fall into one of these categories. For example, rework of defective work or of changed work often affects construction progress but the contractor’s schedule updates do not reflect it.

3. Scheduling Case Law and Principles

With few exceptions, the legal principles and case law governing CPM schedule analysis, delay analysis, and delay claims, derive from the Federal contracting arena, where the specialized United States Court of Claims in Washington, D.C., or specialized boards of contract appeals (e.g., the ASBCA) routinely hear contractor and Government claims of all types. These specialized courts have developed a wide body of case law pertaining to CPM scheduling and schedule delay claims. California has only two reported decisions that provide some guidance to the California public entity and its legal counsel.

California courts have generally recognized the guidance that federal case authority may provide in construction matters. California courts have not declared federal case law binding on schedule delay issues in California; to the contrary, the one court to address the issue cited to the federal standard, found that the contractor had satisfied the federal standard but stated nonetheless that “federal decisional authority is neither binding nor controlling in matters involving state law.”⁴⁴⁴

Thus, a California trial court facing a construction delay claim may find the well-developed body of federal case law on proving construction delay persuasive, but not controlling. In light of Public Contract Code section 7105(d)(2), the public entity’s contract terms covering project scheduling and time extension should play a more significant role.

(a) Judicial Acceptance of CPM Methodology

The critical path method of claims delay analysis has been described as “the formal approach by courts and experts alike in determining the cause and extent of construction

444. *Howard Contracting, Inc. v. G.A. MacDonald Constr. Co.* (1998) 71 Cal.App.4th 38, 52.

delays.”⁴⁴⁵ A federal court of appeals explains the Critical Path Method as follows:

“Critical Path Methodology” (CPM) is a term of art for a method of scheduling and administering construction contracts. The Court of Claims has explained that CPM enables contractors performing complex projects to identify a critical path of tasks that must each be completed before work on other tasks can proceed. A delay on the critical path will thus delay the entire project: Essentially, the critical path method is an efficient way of organizing and scheduling a complex project which consists of numerous interrelated separate small projects. Each subproject is identified and classified as to the duration and precedence of the work. (E.g., one could not carpet an area until the flooring is down and the flooring cannot be completed until the underlying electrical and telephone conduits are installed.) The data is then analyzed, usually by computer, to determine the most efficient schedule for the entire project. Many subprojects may be performed at any time within a given period without any effect on the completion of the entire project. However, some items of work are given no leeway and must be performed on schedule; otherwise, the entire project will be delayed. These latter items of work are on the “critical path.” A delay, or acceleration, of work along the critical path will affect the entire project.⁴⁴⁶

A California Court of Appeals adopted a similar albeit more general formulation in 1971, explaining a critical path schedule as follows:

“These various steps were to be synchronized by means of “critical path” schedules. These schedules would establish a range or spread of dates for the commencement and completion of the various steps. If a particular step was not commenced and completed within the permissible time range, the ensuing steps would be delayed, with the eventual result that desired stages could not be completed in time to avoid undesirable weather conditions, and completion of the project itself might be delayed.”⁴⁴⁷

Many public works contracts now require CPM schedules from construction contractors on projects of moderate to large size, and time impact analysis showing critical delays as a

445. *CMC Steel Fabricators, Inc. v. Harrop And Glenns Falls Ins.* (S.D.Tex. 2000) 131 F.Supp.2d 882, 886, slip opinion, Civil Action No. C-96-38, December 21, 2000, citing *Sauer Inc. v. Danzig* 224 (Fed. Cir. 2000) F.3d 1340; *Morrison Knudsen Corp. v. Fireman’s Fund Ins. Co.* (10th Cir. 1999) 175 F.3d 1221.

446. *Morrison Knudsen v. Fireman’s Fund Ins. Co.* (10th Cir. 1999) 175 F.3d 1221, 1232-1233, citing *Haney v. United States* (Ct. Cl. 1982) 676 F.2d 584, 595, *Wilner v. United States* (Fed. Cir. 1994) 24 F.3d 1397, 1398 n. 5 (en banc) (“[O]nly construction work on the critical path had an impact upon the time in which the project was completed.”) (quoting *C.M. Shupe, Inc. v. United States* (1984) 5 Cl. Ct. 662, 728)).

447. *Diamond Springs Lime v. American River Constr.* (1971)16 Cal.App.3d 581, 594.

condition of granting time extension.

(b) Requiring Proof of Delays to the Critical Path

Federal courts have recognized that responsibility for construction delays generally rests with the party that delays the project's critical path, holding that: "A delay to an activity that is on the "critical path" usually results in a corresponding delay to the completion of the project. "The reason that the determination of the critical path is crucial to the calculation of delay damages is that only construction work on the critical path had an impact upon the time in which the project was completed." ⁴⁴⁸

The converse is also true. A non-critical path delay will not delay project completion. A Federal Court of Appeals held that the following jury instruction would have correctly summed up federal law governing delay entitlement, critical and non-critical delays:

[Claimant] had to prove that "[t]he delay was a "critical delay." A critical delay is one which would delay not just the particular activity at issue, but the overall completion date of the Work. Many activities may be performed on a project at any time without any effect on the completion of the project. A delay in such non-critical activities will not delay the project overall and cannot constitute an excusable delay. Only delays to activities on the critical path — activities with no leeway in the schedule — may give rise to excusable delay." ⁴⁴⁹

California courts have only implicitly adopted the view of the federal courts. Only one case has addressed this issue. That case specifically approved of the contractor's "critical path method analysis . . . [that] identified the project's critical path and demonstrated that the delays constituted critical path delays." ⁴⁵⁰ This case cites to federal case law but does not, however, contain the broad sweeping pronouncements that the federal case law contains.

(c) Requiring a CPM Schedule Analysis

The federal courts have consistently held that a contractor must use a CPM schedule analysis in order to prove a claim for delay. ⁴⁵¹

448. *Mechanical Contractors, Inc.* (Fed.Cir. 1994) 16 F.3d 1173, 1177, citing *G.M. Shupe, Inc. v. United States*, 5 Cl.Ct. 662, 728 (1984), *Admiral Frank B. Kelso II v. Kirk Bros. Mechanical Contractors, Inc.*, (Fed. Cir. 1993) 16 F.3d 1173, 1177.

449. *Morrison Knudsen v. Fireman's Fund Ins. Co.* (10th Cir. 1999) 175 F.3d 1221, 1233.

450. *Howard Contracting, Inc. v. G.A. MacDonald Construction Co.* (1998) 71 Cal.App.4th 38, 52.

451. *Hoffman Construction Company of Oregon v. United States*, (1998) 40 Fed.Cl. 184, rev'd on other grounds, 178 F.3d 1313 (Fed. Cir 1999) ("The court cannot rely on assertions of a contractor, not supported by a critical path analysis of the project, to award critical path delay costs." (citing *Mega* at 435). *Wilner v. United States*, (1991) 23 Cl.Ct. 241, 255-256 ("[Plaintiff] failed to supply a critical path analysis, and the court is not obligated to attempt to construct one for him. Due to the absence of plaintiff's view of the critical path, the court cannot assign weight to any concept of the critical path as propounded by plaintiff.").

Only one California case has addressed this issue, holding that on a contract to rehabilitate the Venice Canals in Los Angeles, that a Gantt-type bar chart schedule that used critical path techniques to show the critical path as a distinctly colored bar, sufficiently identified the critical path and that demonstrated that the delays constitutes critical path delays, to meet the legal standard of “substantial evidence” sufficient evidence to support the contractor’s award.⁴⁵² The court specifically held that a computer generated “CPM” schedule was not required.⁴⁵³ This case, however, involved a very simple scope of work from the standpoint of project scheduling, where a computer generated “CPM schedule” would not necessarily be used. The significance of the case is its recognition of the contractor’s proof as including proof of critical path delays with a schedule showing the project’s critical path.

(d) Requiring Schedule Updates

Many Federal courts have held that a CPM must be based on contemporaneous updates in order to allocate delay responsibility. To date, these cases mainly arise from Federal Boards of Contract Appeals.⁴⁵⁴ Another court plainly observed that “... [if] the CPM is to be used to evaluate delay on the project, it must be kept current and must reflect delays as they occur.”⁴⁵⁵ The reason for this rule is the critical path may change as time progresses as “items not originally on the critical path can become critical.”⁴⁵⁶ Thus, in one case, a Board denied a contractor’s delay claim because the project schedule prepared subsequent to project completion contradicted the contractor’s contemporaneously prepared schedule updates.⁴⁵⁷

(e) Common Claims of Public Owner Caused Project Delays

On public works projects the public owner has two types of rights and obligations that affect the contractor’s progress of its work. The first type of obligation are “express obligations,” specifically, obligations required by statutes or regulators, the contract, or affirmative promises or statements by the owner upon which the contractor relies. The second type of obligations are “implied obligations,” specifically, obligations implied by California law or by construction industry practice.

Express obligations include the terms and conditions set forth in the construction contract

452. *Howard Contracting, Inc. v. G.A. MacDonald Construction Co.*, (1998) 71 Cal.App.4th 38.

453. *Id.* It should be noted that this contract required removing material from the canal and constructing soil retaining walls along the canals. MacDonald was the general contractor, and it subcontracted the excavation to Howard Contracting and the retaining walls to another subcontractor. *MacDonald* showed that restrictions on disposal of the excavated materials and on access to the project delayed the critical path.

454. *Continental Consolidated Corporation*, 1967 WL 320 (Eng. B.C.A.), 67-2 BCA ¶ 6624, ENGBCA No. 2743, ENGBCA No. 2766. (“It is essential that any changes in the work and time extensions due to the contractor be incorporated into the progress analysis concurrently with the performance of the changes or immediately after the delay and thus integrated into the periodic computer runs to reflect the effect on the critical path.”)

455. *Fortec Constructors v. United States* (1985) 8 Cl.Ct 490, 504.

456. *Fortec Constructors v. United States* (1985) 8 Cl.Ct 490, 505.

457. *J.A. Jones Construction Co.*, 1997 WL 191291 (Eng.B.C.A.), 97-1 BCA ¶ 28,918, ENGBCA No. 6252.

and in the public contracting laws. Common breaches resulting in delay claims include failures to timely pay for the work;⁴⁵⁸ provide soils information that is accurate; change orders and time extensions; provide accurate plans and specifications; provide the site on the date and manner indicated in the contract;⁴⁵⁹ provide inspections in a timely manner;⁴⁶⁰ provide a knowledgeable engineer to act on requests for information and other assistance required of a design professional.

Of equal importance are implied obligations. The following four implied obligations are relevant to the contractor's delay claim against the project owner.

(i) Duty of the Owner to Schedule and Coordinate the Project

The contractor is responsible for scheduling and coordinating the contractor's work, the work of its subcontractors, and their interface with architect, engineer, inspectors, and public and private authorities with jurisdiction. One level removed, however, the owner remains responsible to schedule and coordinate the work of the architect, engineer, inspectors, and public and private authorities with jurisdiction. The owner's failure to coordinate and schedule these entities, resulting in interferences with the contractor's work, will commonly result in a claim for compensable time extension.

(ii) Duty to Facilitate Intended Performance

In executing a construction contract in California, all parties impliedly warrant that they will not delay, hinder or interfere with the performance of the other parties. This duty flows from the "implied warranty" of correctness of the plans and specifications. Often times a breach of this duty will also accompany a breach of express contract term.

For example, in one California case the public entity issued a contract to build a seawall that contemplated that the a third party would supply a dredge necessary for certain backfill operations. The court found the supply of the dredge an implied term, that the public entity breached, when the public entity had exclusive knowledge of the dredge's availability. "Clearly an implied term of the contract herein was that once the notice to proceed was issued, the dredge would be available for work on the project."⁴⁶¹

In a recent California case, the court of appeal stated that "[t]he rule is well settled that in every construction contract the law implies a covenant that the owner will provide the contractor timely access to the project site to facilitate performance of work. When necessary permits relating to the project are not available or access to the site is limited by the owner, the implied covenant is breached."⁴⁶²

(iii) Duty of Good Faith and Fair Dealing

458. *Bowman v. Santa Clara County* (1957) 153 Cal.App.2d 707.

459. *Howard Contracting v. MacDonald Construction Co.* (1998) 71 Cal.App.4th 38.

460. *State of California D.O.T. v. Guy F. Atkinson* (1986) 187 Cal.App.3d 25.

461. *Tonkin Construction Co. v. County Of Humboldt* (1987) 188 Cal.App.3d 828, 832.

462. *Howard Contracting v. MacDonald Construction Co.* (1998) 71 Cal.App.4th 38, 50.

Every public works construction contract has an implied duty to all parties to cooperate with other parties in rendering performance. A court discussed this responsibility of a public entity under a public works construction contract:

“Every contract contains an implied covenant of good faith and fair dealing that neither party will do anything which will injure the right of the other party to receive the benefits of the contract and also that each party will do everything that the contract presupposes must be done to accomplish the contract’s purpose. This covenant may alternatively be expressed as a promise not to do anything to make performance under the contract impossible or otherwise to frustrate performance of the contract.”⁴⁶³

This duty can be characterized as placing a clear affirmative obligation on the contractor and the public entity to work with each other within contract parameters for the overall success of the project. A common claim for breach of the duty of cooperation would pertain to the failure to promptly correct errors and omissions in contract drawings, or to promptly issue change orders when necessary, or failing to provide the contractor with direction to proceed in the face of clear conflicting contract terms.

(iv) Duty to Grant Reasonable Time Extensions

A public works contract often contains an express provision requiring the owner to grant the general contractor a time extension for certain delays. When this type of common term is present, courts have added to this term an implied obligation requiring the owner to grant time extensions in a timely manner. This recognizes that time extension does not benefit the contractor if not granted in a timely manner, resulting in acceleration in the interim. Extensions must be timely to allow the additional time to be incorporated into a progress schedule and the remaining work coordinated. Failure to issue a time extension when warranted, may result in a “constructive acceleration” claim, when an owner demands performance within the original or adjusted schedule, even though the contractor is entitled to a time extension for additional time.⁴⁶⁴

(f) Common Defenses to Contractor Delay Claims

Public owners presented with construction delays may often take issue with the contractor’s schedule analysis and assertions of owner responsibility for the schedule. The following checklist of issue will assist the public owner in evaluating the contractor’s position.

(i) Contractual Notice

Terms in public works contracts requiring notice of changes and delays are enforceable.⁴⁶⁵ Contractors will often cite outdated case law holding that notice provisions are

463. *Nicholson-Brown, Inc. v. City of San Jose* (1976) 62 Cal.App.3d 526, 536.

464. *Norair Engineering Corp. v. United States* (1981) 229 Cl.Ct. 160, 666 F.2d 546.

465. Public Contract Code section 7102; Civil Code section 1511; *Acoustics, Inc. v. Trepte Construction Co., Inc.* (1971) 14 Cal. App. 3d 887,912.

not enforceable if relating to the public entity's own breach of contract,⁴⁶⁶ but this caselaw has been superseded by amendments to the very statute relied on in the case commonly cited.⁴⁶⁷ Notice of delay provision vary in the nature of the notice and the information on cost and schedule impacts required. The timing of the notice may also effect the delays for which the contractor may claim.

(ii) Accord and Satisfaction Agreement

If a change order contains or the construction contract reads an accord and satisfaction into change orders, then the failure to request additional time or compensation for delays, impacts, ripple, or cumulative impacts, at the time the contractor signs the change order may result in a waiver of any further rights based on delay due to the changes in that change order.⁴⁶⁸ The fact that the contractor subsequently discovers it requested too little money in the change orders is not a ground to allow further compensation.⁴⁶⁹

(iii) Bid Mistakes

Contractors frequently makes mistakes in their bids, resulting in construction problems during the work. Bid mistakes are uniquely a contractor risk, unless the public entity has contributed to them. Absent relief from the contractor's bid at the outset of the project under the Public Contract Code,⁴⁷⁰ the contractor is bound to perform its contract as bid.

(iv) Contractor Caused Design Related Delay

Often the contractor team may contribute to the project design team's delay in issuing drawings or commenting on submittals, such as, in one case, by submitting multiple forms of shop drawings for a single element.⁴⁷¹

(v) Subcontractor Failures

Contractors sometime fail to secure the agreement of their subcontractors to their schedules until after preparing and issuing the schedules. Subcontractor nonperformance is a contractor risk. If the nonperformance is not justified, then the contractor's remedy rests in a subcontractor substitution under the Subcontractor Risking and Subletting Act, Public Contract Code section 4100 et seq., the contractor is responsible for the failures of its subcontractor.

(vi) Lack of Supervision

Public works contracts quite often have express terms requiring the contractor to adequately supervise its personnel and subcontractors. This duty is also implied in law.

466. *Peter Kiewit Sons Co. v. Pasadena City Jr. College* (1963) 59 Cal.2d 241.

467. Civil Code section 1511.

468. *Hubert Hunt & Nichols, Inc. v. Moore* (1977) 67 Cal.App.3d 278, 310.

469. *Id.*

470. *A & A Electric, Inc. v. City Of King* (1976) 54 Cal.App.3d 457.

471. *Nomellini v. Dept. of Water Resources* (1971) 19 Cal.App.3d 240.

(vii) Insufficient Manpower

When a contractor asserts a delay claim, the owner may analyze the contractor's schedule and identify a discreet group of work activities that were subject to excessive delay, that delayed the critical path and the project completion. Examining these activities closely, the owner may sometimes find that the contractor failed to provide an adequate number of workers or adequately trained workers. Similarly, when a contractor asserts an acceleration claim, the owner may defend that claim by showing that the contractor failed to provide sufficient work force at the beginning of the project and added work force later to maintain schedule.

(viii) Total Cost Claims

California courts have all but eliminated the "total cost" method of claiming damages against the public entity.⁴⁷² The method is only available when the contractor shows that (1) its estimate was reasonable and realistic, (2) the owner will bear 100% of fault for all cost overruns on the project, (3) and it was impossible to maintain better records.⁴⁷³ For example, in *Amelco Electric*, the California Supreme Court disallowed a total cost claim when the contractor's proof included industry "efficiency studies" that acknowledge 5% inefficiencies due to overtime and interference, interpreting that as an acknowledgment that the owner was less than 100% at fault.

(ix) Late Ordering of Materials, Equipment and Supplies

Very often delays to project construction result in delays in procurement, resulting in materials, equipment, and supplies arriving at the job site late, resulting in delays to construction activities. Procurement activities often do not show up on a contractor's CPM schedule, and therefore the owner is not able to track construction delays resulting procurement.

(x) Rework of Defective Work

Public works contracts usually require the contractor to perform the work in good and workmanlike manner and to furnish materials that are new and are free of defects. When the contractor breaches this requirement, the contractor is liable to the owner for damages measured by the cost of construction,⁴⁷⁴ and if discovered during the project, the contractor is obligated to correct the work as part of the ongoing construction. This "rework" very infrequently appears on the contractor's schedule as a delay event, even though rework is often a delay event on construction projects.

(g) Public Entity Defenses and Offsets

(i) Limitations of liability

Limitations of liability and indemnification provisions are enforceable,⁴⁷⁵ although

472. *Amelco Electric v. City of Thousand Oaks* (2002) 27 Cal.4th 228, 242-244

473. *Id.* See also *Hubert Hunt & Nichols, Inc. v. Moore* (1977) 67 Cal.App.3d 278.

474. *Jones v. Kvistad* (1971) 19 Cal.App.3d 836; *Amerson v. Christman* (1968) 261 Cal.App.2d 811.

475. *Markborough California v. Superior Court* (1991) 227 Cal.App.3d 705.

contractors may argue that delay damages are the exception to this general rule.⁴⁷⁶

(ii) Liquidated damages and bonuses

The public agency may include in its contract a liquidated damages provision.⁴⁷⁷ “The sum so specified is valid as liquidated damages unless manifestly unreasonable under the circumstances existing at the time the contract was made.”⁴⁷⁸ This provision may be slightly more liberal than the normal rule, which provides for the invalidation of liquidated damages if it can be established that “the provision was unreasonable under the circumstances existing at the time the contract was made”⁴⁷⁹ or would operate as a penalty.⁴⁸⁰ In addition, a public works contract may contain a clause providing for the payment of extra compensation “as a bonus for completion prior to the specified time.”⁴⁸¹

For public entity to assess a contractor with liquidated damages, the public entity must prove that the contractor caused the delay, i.e., the day was inexcusable. Most public works contracts address the allocation of fault and liquidated damages for delay for weather, unexcused contractor delays, and for delays caused by the public entity and the contractor concurrently. Where the contract is silent, and the parties cannot identify the proportion of delay attributable to each party, or where delays are found to have been “occasion by the mutual fault of the parties,” the courts have ruled that liquidated damages will not be accessed.⁴⁸² When delay is identified and the contract allocates risk, the courts will enforce the liquidated damage clause accordingly.⁴⁸³

(iii) Improper, incomplete or defective work

Public works contracts generally require the contractor to perform the work in accord with plans and specifications. If the contractor fails to comply with these requirements, the usual measure of damages is the cost of correction, measured as the cost reasonably required to cure the defect and make the project conform to the plans and specifications.⁴⁸⁴ Where the contractor fails to complete the work, the contract should set the measure. Under caselaw, the measure of damages is the cost of completion by the owner, plus incidental damages, less expenses saved by the breach.⁴⁸⁵

The three primary “owner theories” are as follows:

476. Public Contract Code section 7102.

477. Local public agencies may include liquidated damages provisions. State agencies, however, must include liquidated damages provisions. Public Contract Code section 10226.

478. Government Code Section 53069.85 (emphasis added).

479. Civil Code Section 1671, subdivision (b) (emphasis added).

480. Civil Code Section 3275.

481. Government Code Section 53069.85.

482. *GOGO v. Los Angeles County Flood Control District* (1941) 45 Cal.App.2d 334; *Aetna Casualty and Surety Company v. Board of Trustees* (1963) 223 Cal.App.2d 337.

483. *Jasper Construction, Inc. v. Foothill Junior College District* (1979) 91 Cal.App.3d 1.

484. *Jones v. Kvistad* (1971) 19 Cal.App.3d 836; *Amerson v. Christman* (1968) 261 Cal.App.2d 811.

485. *Kennedy v. Reece* (1964) 225 Cal.App.2d 717.

Breach of express warranty. Most construction contracts include an express warranty that the contractor will perform the work in a good and workman like manner with equipment that is new and that meets contract requirements. An actionable express warranty can also arise from advertising, samples and product data. The owner is often a third party beneficiary of subcontractor warranties. Breach of these basic warranties will provide a breach of contract and setoff defense.

Breach of implied warranty. Implied warranties cover construction in California, and include the implied warranty of fitness for a particular purpose.⁴⁸⁶ A failure of the construction to conform to the implied warranty will provide the owner with a theory of recovery.

Negligence.⁴⁸⁷ Negligence is limited in California by the economic loss doctrine, which generally prohibits recovery if the owner has suffered only economic damages but not bodily injury or property damage to property *other than* the construction.⁴⁸⁸ If the property damage is only to the contractor's actual construction, then negligence is not available and only a contract based claim exists. Therefore, unless there is a credible injury to person or property resulting from a construction defect, the owner's remedies including cost of repair, will generally be limited to the remedies available under contract and/or warranty.

(h) Owner Supplied Equipment

When the public owner is purchasing equipment directly, its claim for nonperformance against a supplier will likely be governed by the Uniform Commercial Code. In that case, by code, the public owner may be entitled to consequential damages and incidental damages, while the vendor may be entitled to incidental damages.⁴⁸⁹

4. Schedule Of Values and Submittals

(a) Schedule of Values

Construction contracts typically require the general contractor submit a schedule of values as one of the early contract submissions. The schedule of values apportions the total contract price over various the portions of the work. The schedule allows the owner or its construction manager to monitor the percentage of the work completed for each portion of the project, and pay accordingly for work performed and in place. For example, the schedule of values may assign a portion of the contract price to concrete. The owner can inspect the work and only pay for the percentage of concrete that has been placed.

The owner should review the initial schedule of values submitted by the contractor to

486. *Pollard v. Saxa & Yolles Development Co.* (1974) 12 Cal. 3d. 374, 380.

487. Strict liability also applies to construction in California, but generally limited to mass produced housing and other products of construction distributed on a large basis with an unreasonably dangerous defect or common defect. Negligence is the theory commonly employed by public entities.

488. *Aas v. Superior Court* (2000) 24 Cal.4th 627. Although this case applied to a design professional and a homeowner, courts are routinely applying it broadly as further extending the "economic loss rule" in California.

489. U.C.C. Section 2-714 to 2-715.

ensure that the contract is properly allocated. The owner's risk is that the schedule is "front loaded", or has too much money allocated to portions of the work occurring early in construction (e.g., site excavation, foundations, steel or concrete frame), and inadequate money allocated to the late stages of the work (e.g., interior finishes, painting, carpeting).

A front loaded contract presents risks to the owner because the contractor is likely drawing its profit and overhead early in the project, which can create two problems as the project nears completion. First, the unpaid contract balance and the withheld retention may be primarily subcontractor and supplier money. Retention is intended to provide funds for stop notice claims and to motivate the contractor to finish the work, and if the contractor has obtained its money early, those protections decrease. Second, the contractor may lose motivation to perform at project end, resulting in a slow closeout process.

(b) Submittals

Most public contracts require that the general contractor provide all of the project's submittals and shop drawings within a set period of time after award. Submittals generally consist of product "cut sheets" showing the products the contractor intends to use for the project, including everything from cement rebar to carpet, paint, and tile. The design team must review the submittals to determine whether the products submitted meet the contract requirements.

In addition to the produce submittals, the contractor and its subcontractors must submit shop drawings for review by the design team. Shop drawings bridge the gap between the design intent stated in the drawings and the requirements for actual manufacture of the materials. For example, the steel subcontractor will usually prepare detailed drawings of each and every beam and column, including the layout and locations of any welds or holes to be drilled. These drawings are then reviewed by the design team, which often marks the drawings for correction and resubmittal.

Incomplete or incorrect shop drawings and submittals may result in project delays, particularly with long lead time items.

B. Managing the Quality of the Work

1. Inspections And Corrective Work

Virtually all construction work in California is subject to permits and inspection by a state or local agency. Failed inspections may require the contractor to perform remedial to correct the defects and pass the re-inspection. Construction contracts almost always require a contractor to complete this remedial work at its own cost and without an increase in the schedule.

On more complex projects, such as hospitals, prisons, and schools, there may be a third party inspector, the inspector of record ("IOR"). The IOR is usually hired by the owner, with the approval of the architect, but is responsible for enforcing the applicable codes for the regulatory agency, for example DSA or OSHPD.

Hospital projects in particular require an intense level of inspection during all phases of construction and the complexity of the building systems often results in thousands of inspections,

which may require extensive re-work. If the contractor does not provide adequate time in the schedule to make corrections, the project may be delayed. Disputes over the need for and stringency of the inspections often result. The IOR and regulatory agency have no liability for the delays.

2. Punch Lists And Project Closeout

The project closeout phase is generally the period of time between substantial completion and final completion. At this stage, the work is essentially complete. The general contractor is working to demobilize from the project and is probably beginning to shift resources to other projects. Most of the subcontractors have moved on to other jobs, and the majority of the contract money has been paid out. Yet many significant and often time consuming tasks remain, including completion of all of the work, final commissioning of building systems, staff training, and handoff of operation and maintenance records and keys.

Many owners find themselves trapped in a “slow closeout” process, where the final punchlist work moves very slowly and the last five percent of the work takes much longer than expected. Many owners will motivate the contractor to complete by imposing liquidated damages for the time between substantial and final completion.

As noted above, a public agency may include in its contract a liquidated damages provision.⁴⁹⁰ “The sum so specified is valid as liquidated damages unless manifestly unreasonable under the circumstances existing at the time the contract was made.”⁴⁹¹ In addition, a public works contract may contain a clause providing for the payment of extra compensation “as a bonus for completion prior to the specified time.”⁴⁹²

Because the public agency may have beneficial occupancy of the project following substantial completion, the liquidated damages are often set at a lower rate for the closeout period.

From the owner’s perspective, an extended project close-out involving a meaningful number of open or defective items requires the owner to deal not only with the inconvenience of an unfinished project but also to continue to manage the completion of the project. If the owner does not have the responsible in-house personnel, it must continue to pay its construction manager and its design team to oversee the completion. The lack of final completion may extend the period for subcontractors and suppliers to file stop notices. If the open items are significant, they can interfere with the owner’s use of the project.

For the construction manager and design team, extended close-out means continuing services for which the owner will not be enthusiastic about paying and may tie-up project personnel and prevent their reassignment to other revenue-producing projects.

490. Local public agencies may include liquidated damages provisions. State agencies, however, must include liquidated damages provisions. Public Contractor Code section 10226.

491. Government Code section 53069.85 (emphasis added).

492. Government Code section 53069.85.

The contractor has most likely already de-mobilized, so it is inconvenient for a project superintendent to go to the site and make sure the close-out work is proceeding at an acceptable pace and quality. The subcontractors are probably resisting going back to the project and are instead inundating the contractor's project manager with requests to have their retention released. Equipment warranties have probably commenced against the contractor, but the contractor's warranty obligations to the owner probably have not commenced until actual completion, thereby leaving the contractor exposed to additional risk.

C. Overview of Construction Insurance Issues

A full discussion of insurance coverage, risks, and insurable events on a construction project is beyond the scope of this manual. Rather, we identify some common insurance concepts and identify potentially insurable events.

The main types of coverage encountered on a construction project are summarized below.

Builder's Risk. Builder's risk insurance typically provides coverage for the materials, fixtures, and equipment used during construction. It is intended to cover losses that occur before the building or structure is completed. Most owner's property insurance policies will not cover losses to works of construction, and the builder's risk policy fills this gap.

General Liability. Commercial general liability policies typically insure against property damage and bodily injury claims. These policies are the primary vehicle for recovery of damages for defective work discovered after construction is complete and warranty periods have run.

Errors and Omissions. Errors and omissions policies (E&O) typically provide coverage for design negligence that results in covered loss. E&O policies are almost always written on a "claims made" basis, which may require the owner to put the designer on notice of potential claims during the project.

Wrap Coverage. On larger projects, an owner or contractor may secure project-specific coverage that covers all of the parties involved, including the owner, contractor, subcontractors, and design professionals. These are often referred to as Owner Controlled Insurance Programs ("OCIP") or Contractor Controlled Insurance Programs ("CCIP"). The policies are generally written on manuscript form, as opposed to using standard industry forms, and typically include commercial general liability coverage and excess coverage, and they may also include worker's compensation and builder's risk coverage.

The practitioner should be aware of general principles of insurance law as they relate to potential claims:

Insurance Policies are Contracts. Insurance policies are contracts, and coverage depends on the policy language.⁴⁹³ Policies are read and interpreted in the same manner as any other

493. *Stein v. International Ins. Co.* (1990) 217 Cal.App.3d 609.

contract.⁴⁹⁴ In order to understand what losses are covered, the practitioner must carefully read the insuring clause, and then read the exceptions to and exclusions from coverage. There is an extensive body of California case law interpreting many of the common insurance policy terms. Care must be taken when reading the case law, because policy forms change over time and older cases often review outdated policy language.

“Claims Made” versus “Occurrence” coverage. Most commercial general liability policies are written on an “occurrence” basis, meaning they will provide coverage if the injury or damage occurred during the policy period, even if the claim was made after the policy ends. “Claims made” policies, however, require the claim to be made during the policy period. Errors and omissions policies (i.e., those insuring designer error) are written on a “claims made” or “claims made and reported” basis.

Damage to Property. Most policies do not insure against purely economic losses that do not result in injury to persons or property. In the absence of a tangible harm, coverage may not be available. In some instances, defective materials are incorporated into the building, for example pipes or electrical wiring that are improperly manufactured or do not meet code requirements, but these items have not yet caused any damage to the property. Normally, the lack of physical harm would not trigger insurance coverage.

As a general matter, under California law, commercial general liability policies “are not designed to provide contractors and developers with coverage against claims their work is inferior or defective.”⁴⁹⁵ One California court explained the policy justifications for this rule:

The risk of replacing and repairing defective materials or poor workmanship has generally been considered a commercial risk which is not passed on to the liability insurer. Rather, liability coverage comes into play when the insured's defective materials or work cause injury to property other than the insured's own work or products. As one commentator explained: “This distinction is significant. Replacement and repair costs are to some degree within the control of the insured.... If replacement and repair costs were covered, the incentive to exercise care or to make repairs at the least possible cost would be lessened since the insurance company would be footing the bill for all scrap.”⁴⁹⁶

On the other hand, some cases hold that where the defective work or material must be removed or repaired to comply with building code or health and safety standards, its presence constitutes physical injury to the building, triggering coverage.⁴⁹⁷

Horizontal versus vertical coverage. On projects that do not utilize an insurance wrap program, the general contractor and each subcontractor and supplier will typically have its own, independent general liability policy in place. These primary policies typically insure up to a set amount – for example, \$1 million per occurrence up to a \$2 million aggregate. The general

494. *AIU Ins. Co. v. Superior Court* (1990) 51 Cal.3d 807.

495. *Maryland Casualty Co. v. Reeder* (1990) 221 Cal.App.3d 961, 967.

496. *Id.*

497. *Regional Steel Corp. v. Liberty Surplus Ins. Corp.* (2014) 226 Cal.App.4th 1377, 1392.

contractor may also have excess coverage in place in the form of an umbrella or excess policy. Contribution to a loss by insurers at the same level (horizontal coverage) and by excess insurance carriers when primary insurance exists (vertical versus horizontal coverage) present complex legal challenges, and frequently requires careful examination of the insurance policies.

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