Limited Scope Permitting for Time-Sensitive Project Delivery Systems

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Limited Scope Permitting for Time-Sensitive Project Delivery Systems

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ABSTRACT: The traditional system of obtaining legal permission (a permit) to construct a building was developed before the advent of time sensitive project delivery systems. The traditional system of permitting has proven quite effective in safeguarding public safety, health and welfare, but the process can prove costly and time consuming, especially when applied to time-sensitive projects. Rather than creating an entirely new permit system to accommodate delivery of time-sensitive projects, municipalities are experimenting with limited scope permits, which allow completion of only those specific aspects of construction described within the permit. Limited scope permits offer distinct advantages for time-sensitive projects and can be used to more equitably distribute the risk associated with construction among the parties directly involved.

INTRODUCTION

Delivery of construction projects in the United States has traditionally been based upon the design-bid-build system. This system has been used to create numerous impressive structures, but it often proves expensive and usually requires considerable time, because design, permitting and construction are accomplished in sequential order and do not overlap. Several alternatives to the traditional system have been developed, many of which fall under the classification of time-sensitive project delivery systems. The most commonly used time-sensitive project delivery systems are phased and fast-track construction (Fazio, Moselhi, Theberge & Revay 1988a). Figure 1 illustrates some of the major differences between traditional design-bid-build and two time-sensitive project delivery systems.

Phased construction is carried out by overlapping work packages, such as excavation, foundations, structural steel, etc. Each work package is completed by the designer(s) in chronological sequence, with early activities beginning (or sometimes completed) before design is finalized for later work. Design and construction

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withina single work package do not overlap (Fazio, Moselhi, Theberge & Revay 1988b).

Fast-tracking is accelerated phased construction. Design and construction activities within individual work packages are overlapped to further reduce project duration (Fazio et al. 1988b). Since the total scope of work for some activities is unknown until relatively late in the design process, bidders must often formulate estimates based, at least partially, upon anticipated quantities. When fast-tracking a project for construction, the owner must ensure that contract documents completed later in the design process are consistent with documentation used to begin actual construction.

Time-sensitive construction focuses on integrating design, permitting, and construction schedules to capture some of the time lost in the traditional design-bid-build environment. Time-sensitive construction does not shorten the length of time required to complete the individual tasks of creating plans and drawings, acquiring building permits, or actual construction. Instead, design and construction professionals are integrated into a collaborative environment where many of these tasks can be completed (at least somewhat) concurrently.

Rather than the fragmented levels of responsibility which exist under the traditional design-bid-build contracts, phased and fast track contracts often assign responsibility for all details of design and construction to a single entity. This contractual arrangement, known as design-build or design-construct, provides an integrated point-of-contact for the owner, allowing him/her to contact one source with all questions and concerns. A single responsible entity does away with much of the finger-pointing that has become all too frequent on modern construction projects. Because design and construction are performed by one organization under a single contract, claims for design errors and delays are significantly reduced (FHWA 2011). Design-build has a long history in various sectors of public and private construction. Its use has increased significantly in the United States during the past two decades (DBIA 2011).

Phased and fast-track construction, while not focused on reducing construction cost, often produce savings for the owner and/or contractor. The combined effects of paying for a construction loan (which usually has a higher interest rate than more permanent financing) and an earlier completion date (which can save labor hours) may enhance the overall profitability of a proposed project to the extent that an economically infeasible endeavor can be transformed into reality (Russell & Ranasinghe 1991).

The traditional system of granting legal approval (a permit) to construct a project was, however, created in the early 20th century. This system was designed specifically to protect the public’s safety, health and general welfare from less than adequate design, materials and workmanship sometimes encountered when using the traditional design-bid-build project delivery system. The traditional building permitting system, although sometimes viewed as slow, cumbersome and expensive, has proven itself versatile, flexible and responsive to protecting the safety, health and well-being of the public.

When applying for a traditional building permit, all plans, drawings and specifications must be completed, reviewed and approved prior to a full permit being issued. Under the limited scope permitting process now being applied to many time-sensitive projects, construction is divided into different work packages consisting of chronologically phased activities. Only the plans, drawings and specifications pertaining to a specific package must be completed, submitted and approved prior to work beginning on activities within that package (City of Lincoln 2008). An additional limited scope permit is required for each subsequent work package.

The advantages inherent in time-sensitive construction have convinced many US municipalities to legally recognize one or more of its variants as a legitimate delivery system for new construction (City of Ithaca 2000; Los Alamos County 2006). Other jurisdictions restrict time-sensitive construction to alteration or repair work (City of Columbus 2009). A third set of municipalities recognizes that time-sensitive construction can be appropriate for both new construction and for renovation work. The most common method of legally authorizing time-sensitive construction is use of a limited scope permit. The limited scope permitting process is being used by other municipalities to encourage economic growth and competitive development. A faster and more efficient permit process designed to accommodate developing and expanding businesses provides an incentive for new business and industry to locate in the local area and for existing businesses to expand (City of College Station 2004).
Municipalities are, however, reluctant to incur additional liability as the result of limited scope permitting. The City of Lincoln's building code specifies "...you will receive only one set of plans endorsed by stamp indicating that you may, at your own risk, place footings and foundations to grade level only and place underground utilities..." (City of Lincoln 2008). This wording is an example of a municipality using the limited scope permit to distribute risk among the contractor, designer(s) and owner. These three parties are assuming the risk for placing utilities, foundations and/or footings because the municipality has no method of checking whether or not the footings, foundations or utilities will conform to the minimum code specifications required for the completed structure. The limited scope permit thus protects the municipality should the utilities, footings or foundations not comply with parameters required by building code for the eventual use of the structure.

**PROBLEM STATEMENT**

Time and economic issues resulting from attempting to construct phased or fast track projects under the traditional permitting system have caused many contractors to advocate elimination of the traditional building permit system, at least for time sensitive projects. However, suggestions for a system to replace the traditional process have generally lacked provisions to protect public safety, health and well being to the same extent as the traditional permitting process. With only a few minor modifications, a traditional permitting system can be adapted to function very effectively when applied to time-sensitive projects.

In many municipalities, the traditional building permit process is being supplemented by a limited scope permit process, designed specifically to facilitate time sensitive project delivery schedules. Understanding the similarities and differences between the traditional and limited scope permitting processes is a crucial step for contractors who wish to successfully bid on time-sensitive projects. This paper explores, analyzes, and documents the general procedures adapted to create the limited scope permitting process that is currently being used in Lincoln, NE.

**THE TRADITIONAL PERMITTING PROCESS**

A design-bid-build project begins with research into the type of structure proposed by the owner for a site. The owner's initial concept is subsequently modified by requirements contained within various portions of the applicable building codes. Zoning, land use, height restrictions, required setbacks, and many other requirements impact on the size, shape and design of the finished structure. Once an understanding of the proposed intent and restrictions has been established by the designers, a preliminary meeting is held where the design team meets and completes initial coordination with local planning officials, building department staff, fire and safety officials, etc.

Summarized typical procedures for obtaining a building permit under the traditional process are illustrated in Figure 2. The traditional process of obtaining a building permit requires that a full set of construction documentation be completed and submitted to the reviewing departments as part of the permit application (Sections 105.3 and 106 IBC 2006). Construction documentation is normally completed by an architectural/engineering (A/E) firm selected by the owner. Once all construction documents have been completed, sets of plans and specifications are submitted to various code review agencies for approval. The traditional process progresses sequentially through Figure 2, with one or more loops where construction documents are reviewed and deficiencies corrected.

**Figure 2. Summarized Typical Procedures Under the Traditional Building Permit Process**
Review of construction documents is normally completed by various municipal agencies (zoning, health, building, fire, mechanical, etc.) charged with specific areas of responsibility.

When the plans, drawings and specifications have been revised or modified to the satisfaction of all agencies responsible for review and approved by those agencies, a (full) building permit is issued. Issuance of a full permit to the general contractor allows subcontractors to apply for and draw permits for plumbing, mechanical, electrical, etc. which pertain to the scope of those specializations within the structure. Only with these permits in hand can construction work finally commence (Section 105.3 and 106.6.1 IBC 2006).

Compliance with the applicable building codes is checked by various municipal agencies periodically during construction. Once construction has been essentially completed, final code compliance inspections are scheduled and conducted. When the building has been certified by all municipal agencies to comply with applicable code requirements, a "certificate of occupancy" is issued to the general contractor or to the owner (Section 110.1 and 110.2 IBC 2006).

The traditional permit process is sequential in nature and mandates completion of the entire design process before plan review and subsequent construction can begin. Plans, specifications and drawings must be completed, submitted for review and approved before a building permit will be issued. A (full scope) building permit must be obtained by the general contractor before subcontractors can draw permits for specialized construction. Both the general contractor and subcontractors must have permits in their possession before construction can begin. The sequential nature of activities in the traditional process provides a system of checks and balances to protect the public's safety, health and welfare but adds significant time and expense to the construction process.

**LIMITED SCOPE PERMITTING FOR TIME SENSITIVE PROJECTS**

Limited scope permitting begins in a manner similar to the traditional process. However, the limited scope process commonly involves several coordination meetings during initial project planning where municipal agency officials serve as ad hoc members of the project development team. The result of these meetings is a code assessment, which briefly but fully summarizes the primary code requirements affecting the structure. This code assessment is then submitted to municipal agencies (zoning, health, building, fire, mechanical, etc.) for preliminary review (Section 106.3.3 IBC 2006).

Once agencies have completed their reviews and the assessment has received preliminary approval, the design team begins work on preparing construction documents for limited scope work packages. At this point, the limited scope (permit) process radically diverges from the traditional process (Figure 3).

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**Figure 3. Summarized Typical Procedures Under a Limited Scope Building Permit Process**

Whereas when applying for a traditional permit all construction documentation must be submitted and approved prior to a full permit being issued, under the limited scope permitting process only documentation pertaining to the scope of work for a specific phase is required. Thus, if a partial permit is sought for placement of footings and a slab on grade, the scope required to be covered by detailed design drawings might include only the locations of underslab utilities, foundation design, and structural details of the slab itself.

An example of a typical application for a limited scope permit (in Lincoln, NE) is shown in Figure 4. In the...
upper right hand corner, the requester has indicated that a limited scope permit is requested, versus a full (scope) or final permit. Requesting a full scope or final permit requires that all design work on the project be completed, whereas this limited scope permit requires only a partial set of plans. The "shell only" option refers to a limited scope permit that allows the contractor to complete only specified structural and exterior aspects of construction. Under the "shell only" option, interior finish work is expected to be completed at a later date under another limited scope permit possibly by a different contractor.

The municipal departments responsible for certifying that submitted plans, drawings and specifications meet the applicable building codes have been checked along the bottom of the form (Figure 4) by the municipal Plan Review Section when the permit number was assigned. Submission of an application for a building permit results in a Permit Number being assigned (B1000946 on the form shown in Figure 4), which is then entered into an electronic database called Permits Plus®. Permits Plus® is linked to a website at the local city/county building which is available online 24-hours a day for contractors and building department staff. Permits Plus® provides continuously updated information showing what applications have been received, which municipal departments have been tasked to review each application and what the status of each department’s review is at any given time.

Figure 5 shows the Permits Plus® screen pertaining to the status of the permit requested in Figure 4, with separate folders for each of the various municipal departments tasked with reviewing the limited scope permit application. Folders are shown in a closed (versus open) status, indicating that each department has completed its initial review. Fire prevention, structural and utilities departments have approved the plans/drawings/specifications as submitted (indicated by the lighter coloring of those folders and in the folder detail near the bottom of the screen), while the building/zoning and special permit/user permit departments are requesting additional information or have noted deficiencies in the plans/drawings/specifications (indicated by the darker coloring of those folders and in the folder detail near the bottom of the screen).

Questions immediately below the contact information address how the requestor wishes to be informed of any questions, problems or the status of his/her permit application. The requester can have information faxed directly to his/her office (as indicated on the form) or retrieve the information directly from the municipal Plan Review Section’s website. The scope of work requested under this limited scope permit is listed under Description/Scope of Limited Permit near the middle of the left column. Only footings, the foundation and structural steel framing were included in the scope of work outlined by this request for a limited scope permit.
Contractors can learn what additional information was requested or what deficiencies were noted by a specific municipal department by double clicking on the appropriate folder. Figure 6 shows discrepancies noted during a code inspection for fire safety. Each discrepancy has a unique number assigned, which is correlated to one or more drawing(s) and location(s) within the structure. Suggested corrections to discrepancies are noted as are the sections of the appropriate code which pertain to the comments annotated.

Description/Scope of Limited Permit was very different since the second permit covered mechanical, electrical and plumbing systems plus the building's interior finishes and its exterior curtain wall. Construction of a building using the limited scope permitting process normally requires at least two and sometimes significantly more cycles through the limited scope permitting process (Figure 3) to obtain approval covering the full scope of work.

Plans, drawings and specifications for a limited scope permit can often be scrutinized by a smaller number of reviewers (with responsibility only for the areas covered within a specific permit application), so approval under the limited scope procedures is often granted much more quickly than is possible using the traditional system. Issuance of a limited scope permit indicates that the work covered by specific partial design drawings, plans and specifications meets building code requirements. Compliance inspections, identical to those occurring when constructing a project using the traditional permit system, are conducted as construction progresses.

Development of the construction documentation required for limited scope permit applications to cover all details of a single structure usually takes place over several months or years. One person from the design or development team is normally placed in charge of monitoring and controlling this process. Additionally, a consistent method for posting as-built modifications to all documents must be established and adhered to throughout construction. Both the design team and the contractor share responsibility for compiling and submitting the documentation required for final permit approval.

Eventually the full scope of work will have been designed and permitted under two or more limited scope permits. Before final code compliance inspections can begin, all limited scope permits must be converted into a single full scope permit. This process was initiated by submitting another building permit application (Figure 8) requesting a full (or final) permit. The permit number in Figure 8 (for the full scope permit) is identical to the permit number in Figure 4 (for a limited scope permit). No information is provided under the Description/Scope of Limited Permit.
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Permit, indicating that the applicant is requesting that all limited scope permits (issued under this permit number) be converted into a single full scope permit. Included with the final permit application are three full sets of plans and drawings illustrating how work allowed under the limited scope permits complied with applicable building code provisions.

Submitted documentation was again scrutinized by the various municipal departments (checked at the bottom of Figure 8) within the Plan Review Section. The mechanical, electrical and plumbing departments were added as reviewers because of a later limited scope permit. Figure 9 shows the permit status by the various municipal departments for the full scope permit. The screen indicates that all agencies have granted approval (indicated by the lighter color folders) based on the full scope documentation, with the exception of building/zoning and special permit/user permits. Once these two departments receive the information requested or note that discrepancies have been resolved and grant their approval, the database will display that information by changing the departmental icons (folders) to the lighter color and displaying "Approved" in the folder detail near the bottom of the screen.

Theoretically, if only the work authorized by the limited scope permits has been accomplished and the entire scope of work was included in the initial code assessment when it received preliminary approval, the process of obtaining a full scope permit will proceed very smoothly. In reality, modifications to design made during construction often require interpretation of codes and sometimes require changes to completed construction work. Once approval has been obtained from the appropriate municipal agencies, all limited scope permits can be combined into a single full scope permit by the Plan Review Section. Final code compliance inspections can then be conducted and, if/when these are successful, a certificate of occupancy will be issued.

Limited scope permitting has become well enough known and so frequently applied in one form or another that it is now referenced in many building codes. Construction documentation requirements pertaining to phased approval are discussed within the International Building Code Section 106 (IBC 2006). Section 106.3.3 specifically addresses limited scope (phased) permitting.

A MORE COMPLICATED CASE OF LIMITED SCOPE PERMITTING

Southwest High School in Lincoln Nebraska was a $40 million project consisting of approximately 344,800 ft2 of institutional space. Planning began eight months before the first limited scope footing and foundation permit was issued. The preconstruction process centered around development of a code assessment,
which summarized the code requirements affecting the structure. City permitting staff met monthly (or more often) as ad hoc members of the design team, working with construction and design professionals to create a document that reflected institutional needs, code requirements and the designer’s and owner’s preferences. Design was subdivided into nine separate modules based upon location within the structure, corresponding to the letters A-J in Figure 10.

To facilitate applying for limited scope permits and coordinating work within the space available, requests for (limited scope) building permits were submitted based upon five spatial areas. Design modules A & D, C, G, & J and F & H were combined to create permit areas 1, 2 and 3 respectively. Design module B was submitted as permit area 3 while design module E was submitted as permit area 4. Within each of the five permit areas, separate limited scope permits were requested for five different scopes of work: 1) footings, foundations and underground utilities, 2) mechanical, electrical and plumbing (MEP) systems below grade, 3) above grade structural work, 4) the architectural envelope and 5) above grade MEP and above grade finish work. With five separate areas and five different scope of work permits requested per area, a total of twenty-five different (limited scope) permits were issued during the construction process.

Actual construction took place between October 2000 and August 2002, with twenty-two months between issuance of the first limited scope permit and occupancy of the building by Lincoln Public Schools. The project manager for Sampson Construction (the general contractor for the project) estimated that construction would have required at least one additional year had the traditional permitting process have been used in lieu of limited scope permitting (C. Geis, personal communication June 8, 2009).

PROBLEMS WITH TIME-SENSITIVE PROJECT DELIVERY SYSTEMS

Accelerating time schedules through phased or fast-track construction can actually delay completion of construction projects if not judiciously applied. Construction professionals inexperienced in phased construction (or fast-tracking) who choose to adopt these techniques often experience serious problems. Fazio et al. (1988b) cites a case study where 66% of total project delays were attributed either directly or indirectly to attempting to fast-track the delivery schedule. Spending an additional two months on details of specific design packages before awarding the contracts would have eliminated more than seven months of delay. Without the revisions and extra work caused by attempting to accelerate the delivery schedule, duration of this project and the resulting productivity loss would have been significantly reduced.

Phased or fast-track construction is not a solution for common construction communication problems and should generally be utilized only after careful consideration. Project documentation will definitely be more complicated with multiple limited scope permits, each of which must be requested, monitored, updated and finally converted into a full scope permit. The process of converting numerous limited scope permits into a single full scope permit can be a long and arduous task, especially if accurate documentation for each step in the process has not been maintained. A final permit may never be issued if construction has deviated significantly from the code assessment that received preliminary approval.

SUMMARY

Understanding the permitting process is a critical step for contractors toward successful completion of any construction project. The traditional permitting system has served well to protect public welfare, health and safety, but it was not designed to accommodate the newer project delivery systems used with time-sensitive construction. Suggestions for systems to replace the traditional permit process have generally lacked provisions to protect public welfare, health and safety to an extent equivalent to the traditional process.
Rather than discarding it, many municipalities are modifying the traditional building permit process by allowing the use of some form of limited scope permitting. With only minor modifications, the traditional permitting system can be effectively applied to time-sensitive projects. Limited scope permitting, if correctly applied and conscientiously used, can save the owner and the contractor significant time and money. Limited scope permitting also allows municipalities to more equitably distribute risk among the parties who have direct control over the construction process.

Limited scope permitting is not a project delivery system, but is instead a set of administrative procedures adapted from the traditional permitting process to support fast-track and phased project delivery systems. Limited scope permitting allows project planning, design and construction to be completed more expeditiously. Time and money saved results from the use of expedited procedures associated with phased or fast-track construction methods, not from limited scope permitting. Limited scope permitting validates phased or fast-track construction procedures by providing a degree of protection for the general public's health, safety and welfare equivalent to that achieved when using the traditional permit system.

Methods of subdividing a structure into phases for planning, design and construction vary tremendously for different owners, designers, contractors, site conditions, and methods of financing. Possibilities are limited only by the imagination of the individuals involved. Most successful solutions are unique for a specific project and are the result of careful consideration by all parties involved in the planning, design and construction processes.

A limited scope permit authorizes construction of only the scope contained within that specific document. Before final code inspections can be completed, all limited scope permits must be incorporated into a single full scope permit. It is the responsibility of the designers and contractor(s) to maintain and submit documentation for limited scope permits with all modifications in a timely manner so that a full permit can be issued expeditiously. A limited scope permitting process similar to the example outlined in this paper can serve as a practical and easy-to-incorporate supplement to most traditional permitting processes. Adoption of a limited scope permitting procedures has the potential to save contractors, designers, and building owners significant time and money, while more equitably distributing risk among the parties directly involved in the construction process. Limited scope permitting procedures can also serve as an incentive to encourage economic development and relocation or expansion of industry into a local area.

REFERENCES


