CHAPTER 14

Land Development Bid Process

The bid process is the bridge between the regulatory approval process and the construction of the project. This chapter discusses, in depth, a step-by-step procedure for managing the bid process so you can know your costs, schedule the work properly, understand contractor capabilities, and construct a quality subdivision. This residential land development methodology can give your project the highest chance of staying within budget and adhering to the project schedule.

PLANS AND SPECIFICATIONS

The construction documents, as amended during the final design phase of the regulatory permit process, become the approved final construction documents that you will use to build your subdivision. These construction documents, once approved, should be stamped for construction, dated as of the last revision date, and signed and sealed by the professional engineer in charge of the project. Owners should accept only design plans stamped "For Construction" for distribution to contractors. This documentation provides the contractors with the knowledge and comfort that the plans have received local governmental approvals.

Municipalities may require signature blocks on the construction documents for the planning board chairman, secretary, and municipal engineer. They sign the original plans, indicating their approval of the construction documents. Even if a locale does not have this mechanism in place, it is a good idea to provide a signature block for future reference. This reference is especially important when the municipality accepts ownership and maintenance of the project.

Residential subdivisions should have their own land development specifications, as outlined in Appendix 12-1. This outline indicates the various headings incorporated in the specifications report. Different from specifications that relate to interstate highways or major public works programs, these specifications are consistent with the activities required to construct residential projects. The

specifications are owner-friendly and put most of the construction and design responsibilities and liabilities onto the appropriate parties. These specifications, if implemented in the field and monitored by the owner and the local municipality, provide a framework for building a quality subdivision. (For a complete specifications document, contact the author.)

PREBID CONFERENCE WITH STAFF

Before sending the plans and specifications out for land development bid proposals, schedule a prebid conference with the operational staff responsible for overseeing the construction. A brief outline of the prebid conference is provided in Appendix 12-2. Discuss in detail the project specifics and construction requirements. Begin with clearing operations, and follow through to the construction sequence of events. During this prebid conference, any problems associated with the construction documents and the adherence to project schedules should be identified and discussed in depth.

If the project is to be phased, the location for the storage of materials, the staging areas for equipment, and the delivery of the first housing construction pad should be discussed. Land development activities for a residential project should complement the housing activities of the builder. Discuss a definite timetable and project schedules to determine if any unusual hurdles or extenuating circumstances may affect the schedule and the delivery of the first housing pad. The corporate objective is to deliver pads on schedule in order to sell lots or construct homes.

Ask with the staff for recommendations on which contractors should be invited to bid on the project. Discuss the benefits of hiring separate contractors with specific expertise (such as utility installations, curbing, or paving) versus hiring a contractor responsible for the entire project but who subcontracts out for specialty items. Hiring separate contractors for various activities can provide a lower overall project cost. However, this has to be weighed against the need for additional onsite supervision. Moreover, any failure of infrastructure will be subject to debate as to the responsible party when multiple contractors are involved.

If the contractor retained to build the project subcontracts out the work, the owner should hold the contractor responsible for any failure to the infrastructure. In considering available contractors, price is certainly a consideration, but the delivery of pads for housing construction generates the cash flow. The first-phase housing lots should be constructed on an expedited schedule. The design plans must be sensitive to the phasing objectives of the company. Once the first-phase pads have been constructed, the land development infrastructure must be completed in a way that eliminates conflict with housing subcontractors. This allows closing of lots while subsequent phases are being constructed.

BID PROCESS

Contact the contractors selected to bid on the project by phone or letter, and ask if they would like to bid on certain activities or on the entire land development work. It is appropriate to charge a fee for the project plans given to contractors. This fee defrays the cost of printing the construction documents. The fee could be considered a deposit if the plans are to be returned. Returned plans can always be used during construction.

Contractor Information

Each contractor should complete the contractor information sheet, as shown in Appendix 12-3, and return the form with the bid proposal. This information sheet collects data on the financial capability of the firm and a list of references. These references should be contacted. Always consider new firms in order to expand the bid list. Most new firms are motivated do work on time and within budget. For new companies, check references and visually inspect their previous work (Figure 14-1). Also, seek a personal commitment from the owners of the company to meet schedules and price agreements.

Contractor Meeting

Before the bids are submitted by the contractors, schedule a meeting with them to present the project goals and objectives. This meeting is a meeting of all contractors asked to bid on the project, giving them the opportunity to see and hear their competition. The contractors should have the construction documents at least one week before this general meeting, so they have time to review, analyze, inspect, and understand the intent of the project. At the contractor meeting, discuss project details, scheduling, phasing, and design elements. In addition to the contractors, invite local utility company representatives, municipal inspectors, the design engineer, and the project architect to attend this meeting. This way, everyone has the opportunity to openly discuss the design specifics of the project and the construction requirements for delivering the first housing pad. Allow sufficient time for all of the contractors to ask detailed questions.

This contractor meeting gives each contractor sufficient time to fully comprehend the project parameters. Thus, during the analysis of the bids, discussions on any unknown or unusual factors should already have been addressed. The importance of having the competitors ask questions and face off with their rivals is to ensure that potential problems are addressed before they become actual problems. Also, knowing their competition, contractors will provide a very competitive price before entering into the negotiation phase.

Figure 14-1. Contractor Qualifications. The land development bid process includes an investigation of the contractor's capabilities, experience, and reputation for quality construction of residential neighborhoods.
Source: David E. Johnson, P.E., P.P.

During the contractor meeting, establish clear timetables for the submission of bids. A definite deadline for the submission of bids is appropriate, and it should be stressed that any bid submitted after that date will not be accepted. The contractors should be involved in setting the deadline. Thus, if a contractor does not meet the deadline, it can fairly be interpreted as an indication of their inability to meet schedules and perhaps their inability to perform the land development activities. Schedules in land development and housing projects are the key to carrying out any successful project and to sustaining positive project cash flow. Builder/developers rely on contractors to perform efficiently, on time, within budget, and with a high degree of quality.

Contractor's Schedule

A builder/developer's reputation is established or tarnished by contractors implementing construction documents in the field (Figure 14-2). The contractor should submit the project schedule with the bid proposal. This schedule outlines the elements of the work in a timeframe that can be analyzed against corporate goals for delivering houses for closing. The schedule is one aspect of a review of the con-

Figure 14-2. Project Schedule. Success in land development is associated with a defined schedule implemented by the contractor. Selecting a contractor will be based on cost and the commitment to complete the project on schedule.
Source: David E. Johnson, P.E., P.P.

tractor's manpower, quality of construction, reputation, and ability to perform in the field. Their schedule becomes their personal commitment to complete the work on time.

Bid Forms

Consider preparing bid forms for the contractors to use in submitting their prices. This bid form shows the various work activities. Either leave the unit quantities blank or provide the quantities in the bid form. In either case, the design engineer should be providing a detailed quantity report for the project using the same activities required of the land development contractors. The design engineer could provide unit pricing, but it is not necessary because the pricing is to be provided by the contractors for their specific work responsibilities.

By providing quantities in the bid form, the quantities supplied by each contractor can be compared in detail. Thus, it is easier to analyze the individual bids to obtain a true comparison of costs. If the quantities are not included on the bid form, land development contractors will organize their bids by altering quantities and unit pricing to suit their operational style; they will also indicate any problems

with the quantities. Leaving quantities off the bid form makes it very difficult to properly compare bids. The owner or builder/developer will have to engage in substantial discussions with all bidders to ensure the comparison of each proposal is completed with fairness.

Bid Analysis

On receipt of the bid proposals, use an accounting sheet or a computer spreadsheet to enter in the quantities, unit prices, and total prices for each element of work. If the quantities were provided on the bid form, the analysis is reduced to reviewing the unit pricing for each category; if the contractors do not alter the quantities, you can conclude that the quantities are accurate. If the quantities were not provided on the bid form, it may be difficult to compare the work activities and prices among contractors. In most cases, the engineering company should be able to provide accurate cut-and-fill quantities for the project design. Most earthwork contractors use software to provide a computerized printout of the cut-and-fill analysis for the project. Review this information against the quantities prepared by the engineers. If there are no discrepancies or debates over the quantities, your analysis will center on contractor pricing, scheduling, manpower, and experience.

Prepare a spreadsheet with the contractor unit prices and extend the quantities to prepare a cost estimate for each land development activity (see Appendix 12-4).The bid analysis can be entered into the computer or simply be done by hand. In reviewing each bid proposal, resolve any bid discrepancies to ensure a true comparison among bid proposals. Any bid discrepancy, if significant, should be presented to all companies so there are no underlying problems during the analytical aspect of the project. Because this is a private contractual arrangement, public bidding laws do not regulate the process. However, it is good business practice to ensure the bid comparisons are true comparisons; it is better to make decisions on a monetary basis and not on a personal basis.

After spreading the schedule of values, double-check the unit prices, extensions, and any notations the contractor made to ensure that the contractor understands the scope of the work. If misunderstanding of the work scope seems to come to light in the bid proposal, contact the contractor to resolve the issue.

Once the schedule of values has been extended and all discrepancies resolved, analyze each bid proposal and prepare a detailed recommendation on the contractor selection. Prepare negotiation strategies for each contractor selected to do the work.

Contractor Selection Process

The following are key elements of the contractor selection process: competitive price, sense of cooperation, skill, expertise, project experience, reliability, refer-

ences, professionalism of the owner and experienced management staff, quality equipment, and qualified superintendents. The contractor must have a qualified superintendent on the job site because the builder/developer will be working with that person on a day-to-day basis. The superintendent must be sensitive to the owner's needs during construction. If the contractor's superintendent has been delegated the responsibility to build the project and his decisions are questionable, the contractor should be asked to assign someone different to manage the project.

If several contractors are within a reasonable range of total dollars, those companies should be asked to proceed with the negotiation of a contract price. The intent is not to produce a bidding war, but it is incumbent on the builder/developer to get the best price for the work. Some contractors may view the project as important to meet their corporate goals; they may be more willing to work with less of a profit margin just to get the work. Land developers need to keep their equipment and their workforce working continuously. The automatic selection of the low bidder may not lead to the best result It is appropriate to call two or three contractors to further negotiate the final contract agreement.

If separate contractors are selected for different land development activities, such as for curb or paving work, limit the negotiations to the specific work items. The combined individual contractor prices should be compared to the general contractor's price to do all of the work under its corporate umbrella. This approach provides a true comparison of the price for a group of individual contractors versus the price from one contractor. The cost difference has to be weighed against the management responsibility required to oversee multiple subcontractors.

If the bid proposal includes the owner's quantities, the unit prices for each activity require negotiation. Sometimes it is cost effective to negotiate a lower price on a specific line item having a large quantity. The cost savings may be much greater than what could be achieved by negotiating an unreasonable unit price for a small amount of work.

During the negotiation phase, meet with the contractors to discuss their bid proposals and obtain the personal commitment from each contractor to adhere to the project schedule. This personal commitment is important to the overall success of the project. A well-constructed project is hardly ever recognized by its quality, but it is judged by the number of complaints. Eliminating problems with strong management will be the only award a contractor will receive. If the project is critical to business objectives, provide a timetable with financial incentives to the contractor. If quality construction can be accelerated ahead of schedule, consideration offering a financial award to the contractor.

LAND DEVELOPMENT CONTRACTS

The preparation of a land development contract for execution by the owner and land development contractor can take several forms.

Unit-Price Contract

A unit-price contract establishes specific unit prices for specific work scopes, and the quantities of material installed are measured in the field. The agreed-on unit prices are used to calculate the ultimate payment for work accomplished.

Time-and-Material Contract

A time-and-material contract is based on labor, equipment, and material. The contractor provides an equipment list and the hourly cost for equipment and labor (for example, the equipment operator). The equipment time and material used become the basis of the contract. Generally, in a time-and-material contract, the equipment list and the hourly rates combined with receipts from material suppliers represent the total cost for the activity. The time allocated by a contractor should be verified by time cards or staff monitoring. The contractor should not pass the material costs through their administrative procedures and add a fee for processing. The builder/developer should consider opening an account with material suppliers (pipe suppliers, concrete companies, etc.). A true savings can be achieved by purchasing material directly from the supplier. Managing the material used by a contractor will result in cost savings.

Lump Sum Not to Exceed

A "lump sum not to exceed" contract establishes a fixed total amount. If properly administered, this type of contract can provide the highest degree of predictability of the project costs. The "lump sum not to exceed" contract is extremely beneficial to the developer in controlling costs, knowing costs, and managing costs for the project, because the actual profit margins accruing to the developer can be anticipated in the project pro forma. Extenuating circumstances in the field under a lump sum contract may become the source of debate between the developer and contractor for payment of extra work. However, the possibility of extenuating circumstances can be overcome by including the equipment list and the hourly rates as part of the lump sum contract. Another potential problem with a lump sum contract comes from the complexity of earthwork operations. Unsuitable soil or rock encountered during construction and not identified in the soil investigation work may cause a problem for the contractor. Therefore, during the negotiation process, address this situation as an extra work provision in the contract. The contract provisions should be specific in terms of extra work activities; then, as long as the extra work is approved by the developer, the contractor can proceed without delay by using the agreed-upon hourly rates for equipment and operators to complete a task.

For budgeting purposes, extras can be handled several ways. A contingency budget item can be included in the overall project pro forma, which has its own

separate account. Or, each individual land development activity can be budgeted with its own contingency line item. The total land development cost, known or projected with accuracy, is a must before the release of houses or lots for sale.

Once houses or lots are released for sale, the project unknowns, resulting in extras, or the inability to perform the work in an efficient manner will increase the development costs. If these costs are not accounted for in the pro forma, the price of lots or houses must be increased. It is extremely important to maintain continuous building operations so that profitable companies can continue to prosper and provide new housing opportunities.

A comprehensive 19-step contract outline, highlighting the provisions of a land development contract, is provided in Appendix 12-5. The contract should clearly identify project schedules as being an important element of the work requirements of the contractor. A sample land development contract, as shown in Appendix 12-6, has proven to be successful in implementing a single-family residential project. Once the contract has been executed, schedule a preconstruction meeting. At the meeting, include the staff, land development contractor, surveyor, utility companies, engineer, governmental officials, and others to discuss the project specifics, mobilization of the land development contractor, and the staging area within the project site. Any last-minute contractual problems can be resolved at that time. Subsequently, regular project meetings are necessary to ensure open communications among the contractor, government inspectors, and developer. Addressing problem areas as they are presented in the field is necessary if the project is to maintain its schedule.

External influences will affect the project schedule. However, these situations, such as bad weather, cannot be controlled by the owner. As with any project, the schedule should include slack time that accommodates lost days resulting from uncontrollable and unpredictable events. Adverse weather can alter the schedule, but should not change the goal of delivering the first housing pad on time.

CONSTRUCTION DOCUMENT REVISIONS

The construction documents for any residential housing project may need to change for a variety of reasons. Changing the construction documents requires the engineering company to assess the change and revise the plans. Revision dates, revision numbers, and reasons for the change should be indicated on the plans. The revised plans should be sent to the appropriate governmental agencies and to the land development contractor for implementation.

Field Conditions

Field conditions affecting the project could cause revisions to the construction documents. For example, if a topography bust is discovered and the elevations in

the field are not consistent with the design plans, the construction documents must be reviewed and, if necessary, changed to reflect the existing elevations. The land development contractor will benefit from this field problem. Do not delay the project while negotiating the cost ramifications for correcting a field problem.

Better Designs

Owner representatives may change the scope of the work or change the construction documents to incorporate a housing design or foundation design that better reflects the project goals. The housing product should change as market conditions change. If a developer concludes that the project should be modified to accommodate a different product approach for greater absorption, the developer can issue a design change notice. For example, preparing pads for slab construction would alter earthwork quantities if the plans originally called for basement foundations and the negotiated price was based on basements.

Contractors should submit operational design changes through a shop-drawing procedure. If they find a less expensive material or a better way of completing the work, an approved design change may affect the construction documents. A change implemented in the field may change the cost of the negotiated agreement and affect regulatory permits and approvals.

Regulatory or design engineer revisions can affect the design plans. Field inspections may change the construction documents to reflect an engineering approach that can accelerate the schedule or reduce costs.

All changes to the construction documents affect the engineer, government inspections, the developer, the contractor, and houseline contractors. Any change to the construction documents will affect regulatory permits, approvals, and the ultimate purchasers of the lots or houses. Any design changes or changes to the construction documents should be cross-referenced to permits and approvals issued for the project. If no conflicts arise, then the change can be implemented without delay.

BUDGET VERSUS ACTUAL COST REPORT

Once the housing project is underway and the contractor is submitting invoices each month, a budget versus actual cost report should be distributed monthly. A budget versus bid report showing the differences between the budget and the actual bid proposal is outlined in Appendix 12-7. If there are any negative differences between the budget and the bid price, the price of the product being sold may need to be adjusted to meet profit goals.

CHAPTER 15

Land Development Project Management

After the land development contractor has been selected, the builder/developer must now focus on managing the contractor until work is complete. Strive to complete the project on time, within budget constraints, and without field problems. This chapter reviews practical management techniques to oversee field operations (Figure 15-1).

COMMUNICATION

A daily diary should be maintained by the field superintendent managing the day-to-day activities of the land development contractor. The diary is a historical accounting of the project and substantiates the actions of the land development contractor. The diary should be specific on matters of compliance with the contract agreement. Each day, all land development issues must be recorded and communicated to all involved parties; this includes the municipal inspector and the contractor to ensure that the issues can be resolved without delay.

There are several ways to keep track of land development work as it progresses through to completion. The contractor should submit an updated construction schedule with each draw request. Each invoice and schedule should be submitted to the field office—not to the main or corporate office. The draw request and the construction schedule must be reviewed and approved by the personnel responsible for managing that contractor. With each draw request, a simple accounting of the actual costs versus the budget amounts should be analyzed before the invoice is approved and submitted to the corporate accounting office for payment.

SCHEDULE

Appendix 15-1 shows a land development progress schedule. This land development progress schedule should span the entire infrastructure construction phase.