

Industry Standards for Architectural Precast Concrete

The use of architectural concrete has increased because of its economy, designer freedom and universal availability. Also, with the increased use, a highly specialized industry has developed. The successful use of architectural precast concrete is dependent upon the designer's understanding of the product.

The primary goal of this standard is to build better understanding by suggesting standards which more clearly define procedures and responsibilities, thus resulting in fewer problems for everyone involved with each project.

1. Definition and types

1.1

Architectural precast concrete products are precast concrete units of custom design, complex shapes, and varying dimensions.

In order to avoid misunderstandings, it is important that the contract documents for each project list all the elements that are considered to be architectural precast concrete.

1.2 Types

Architectural precast concrete units are classified into basic types in relation to the method of manufacture and resultant product.

1. Simulated Limestone, dry tamp
2. Simulated Limestone, wet mix
3. Simulated Keystone
4. Simulated Granite, dry tamp
5. Simulated Granite, wet mix
6. Exposed Aggregate
7. Form Finish
8. Smooth Finish (rubbed)
9. Sandblasted Texture, SPECIFY (light, medium, heavy)
10. Form Liners, flexible and rigid
11. Special Types

2. Samples, mockups and qualification of manufacturers

2.1 Samples and Mockups

If samples are required, they should be described in the contract documents and the samples should be manufactured in accordance with Section 03 of Architect's Specification Guide, Precast Concrete Panels, 1.03 Submittals.

2.2 Qualification of Manufacturer

Manufacture, transportation, erection and testing should be accomplished by a company, firm, corporation, or similar organization specializing in providing precast products and services normally associated with architectural precast concrete construction.

The manufacturer may be requested to list similar and comparable work successfully completed by him, and adequacy of plant capability and facilities for performance of contract requirements.

3. Contract Documents and Design Responsibilities

3.1 Contract Documents

Prior to initiation of the engineering-drafting function, the manufacturer should have the following contract documents at his disposal:

**Architectural drawings,
Structural drawings,
Specifications (complete with addenda).**

Other pertinent drawings may also be desirable, such as shop drawings from other trades, roofing requirements, alternates, etc.

3.2 Design Responsibilities

It is the responsibility of the owner (The owner of the proposed structure or his designated representatives, who may be the architect, engineer, general contractor, public authority or others contracting with the precast manufacturer.) to keep the manufacturer supplied with up-to-date documents and written information. The manufacturer should not be held responsible for problems arising from the use of outdated or obsolete contract documents. If updated documents meets are furnished, it may also be necessary to modify the contract.

The contract documents should clearly define the following:

1. Items furnished by manufacturer;
2. Size, location and function of all openings, blackouts, and cast-in items;
3. Production and erection schedule requirements and restrictions;
4. Design intent including connections and reinforcement (When the manufacturer accepts design responsibility, the area or amount of responsibility must be clearly defined in the contract documents. The engineer or architect of record must be identified and it is understood that all designs are submitted through him for his approval and acceptance. The manufacturer's responsibility will be limited to member design only.);
5. Allowable tolerances and deviations. Normal field tolerances should be recommended by the manufacturer (See Architect's Specification Guide, Precast Concrete Panels, Section 03.);
6. Dimension, material and quantity requirements;
7. General and supplemental general conditions;
8. Any other special requirements and conditions;
9. Site plan showing storage areas to be used, parking areas for trucks and equipment, etc.

4. Erection and Production Drawings

4.1 Erection Drawings

The information provided in the contract documents is used by the manufacturer to prepare erection drawings for approval and field use. They contain:

1. Plans and/or elevations locating and dimensioning all members furnished by manufacturer;
2. Sections and details showing connections, finishes, openings, blockouts and cast-in items and their relationship to the structure;
3. Description of all loose and cast-in hardware including designation of who furnishes it;
4. Drawings showing location of anchors installed in the field;
5. Erection sequences and handling requirements.

4.2 Production Drawings

The contract documents are also used to prepare production drawings for manufacturing showing all dimensions together with locations and quantities for all cast-in materials (reinforcement, inserts, etc.) and completely defining all finish requirements.

4.3 Discrepancies

When discrepancies or omissions occur on the contract documents, the manufacturer has the responsibility to check with the architect/engineer to resolve the problem. If this is not possible, the following procedures are normally followed:

1. Contract terms govern over specifications and drawings;
 2. Specifications govern over drawings;
 3. Structural drawings govern over architectural drawings;
 4. Written dimensions govern over scale dimensions;
 5. Details govern over sections;
 6. Sections govern over plans or elevations.
- Graphic verification should be requested for any unclear condition.

4.4 Approvals

Completed erection drawings, usually in reproducible form, should be submitted for approval. The exact sequence is dictated by construction schedules and erection sequences, and is determined when the contract is awarded.

Production drawings should not be started prior to receipt of approved or approved-as-noted erection drawings. Production drawings should be submitted for approval only when so requested.

Corrections should be noted on the reproducible erection drawings and copies made for distribution.

The following approval interpretation is normal practice:

1. Approved The approvers (The contract should state who has approval authority.) have completely checked and verified the drawings for conformance with contract documents and all expected loading conditions. Such approval should not relieve the manufacturer from responsibility for his design when that responsibility is placed upon him by the contract. The manufacturer may then proceed with production drawings without resubmittal. Erection drawings may then be released for field use and plant use.
2. Approved as Noted Same as above except that noted changes should be made and corrected erection drawings issued. Production drawings and production may be started after noted changes have been made.
3. Not Approved Drawings must be corrected and resubmitted. Production drawings should not be started until "approved" or "approved as noted" erection drawings are returned.

5. Materials

5.1

The relevant ASTM Standards that apply to materials for a project should be listed in the contract documents together with any special requirements that are not included in the ASTM Standards.

Note: Additional information regarding material specifications can be found in Architect's Specification Guide, Precast Concrete Panels.

6. Test and Inspections

6.1 Test of Materials

Manufacturers keep the test records required by the contract documents for quality control of the project.

The contract documents may require the precast concrete manufacturer to make these records available for inspection by the owner's representative upon his request.

When the manufacturer is required to submit copies of test records to the owner, these testing requirements should be clearly described in the contract documents along with the responsibility for payment.

6.2 Inspections

On certain projects the owner may require inspection of precast concrete products in the manufacturer's yard by persons other than the manufacturer's own quality control personnel. Such inspections are normally made at the owner's expense. The contract documents should describe how, when and by whom the inspections are to be made, and who is to pay for them.

6.3 Fire Rated Products

If the manufacturer is expected to provide a fire rated product and/or labels, these requirements should be clearly stated in the contract documents.

7. Finishes

7.1

Finishes on architectural precast concrete products are probably the cause of more misunderstandings between the various members of the building team than any other question concerning product quality.

It is, therefore, extremely important that the contract documents describe clearly and completely the required finishes for all surfaces of all members, and that the erection drawings also include this information.

Where special or critical requirements exist or, where large expanses of exposed precast will occur on a project, samples are essential and, if required, should be so stated and described in the contract documents.

8. Delivery of Materials

8.1 Manner of Delivery

The manufacturer should deliver the precast concrete to the erector (The erector may be either the manufacturer or a subcontractor engaged by the manufacturer or general contractor.) in a manner to facilitate the speed of erection of the building or as mutually agreed upon between the owner, manufacturer and erector. Special requirements of the owner for the delivery of materials or the mode of transport, should be stated in the contract documents.

8.2 Marking and Shipping of Materials

The precast concrete members should be separately marked in accordance with erection drawings in such a manner as to distinguish varying pieces and to facilitate erection of the structure. Any members which require a sequential erection should be properly marked.

The owner should give the manufacturer sufficient time to fabricate and ship any special plates, bolts, anchorage devices, etc., contractually agreed to be furnished by the manufacturer.

8.3 Precautions During Delivery

Special protection or precautions beyond that required in Architect's Specification Guide, Precast Concrete Panels Section 03, 1.04 Product Delivery, Storage and Handling, should not be expected unless stated in the bid invitation or specifications. The manufacturer is

not responsible for the product after delivery to the site unless required by the contract documents and agreed to by the manufacturer.

8.4 Access to Jobsite

Free and easy access to the delivery site should be provided to the manufacturer, including backfilling and compacting, adequate drainage and snow removal, so that delivery trucks can operate under their own power.

8.5 Unloading Time Allowance

Delivery of product includes a reasonable unloading time allowance. Any delay beyond a reasonable time is normally paid for by the party responsible for the delay.

9. Erection

9.1 Special Erection Requirements

When the owner requires a particular method or sequence of erection this information should be stated in the contract documents.

9.2 Tolerances

Some variation is to be expected in the overall dimensions of any building or other structure. It is common practice for the manufacturer and erector to work within the tolerances recommended by the American Concrete Institute and the Architectural Precast Association.

The owner, by whatever agencies he may elect, immediately upon completion of the erection, should determine if the work is plumb, level, aligned and properly fastened. Discrepancies should immediately be brought to the attention of the erector so that proper corrective action can be taken.

9.3 Foundations, Piers, Abutments and Other Bearing Surfaces

The invitation to bid should state the anticipated time when the structure will be ready and accessible to the erector. Final scheduling should be coordinated with the general contractor.

9.4 Building Lines and Bench Marks

The precast manufacturer (if responsible for erection) should be furnished a drawing on which all building lines and bench marks at the site of the structure are accurately located.

9.5 Anchor Bolts and Bearing Plates

The precast manufacturer furnishes, but does not install anchor bolts, plates, etc., that are to be installed in cast-in-place concrete or masonry for connection with precast members. It is important that such items be installed true to line and grade, and that installation be completed in time to avoid delays or interference with the precast erection.

Erectors should check both line and grade in sufficient time before erection is scheduled to permit any necessary corrections. Corrections, if any, should be made by the general contractor before erection begins.

9.6 Utilities

Water and electricity for erection and clean, caulk and patch operations should be furnished by the owner.

9.7 Working Space

The owner should furnish adequate, well drained, convenient working space for the erector and access for his equipment. The owner should provide adequate storage space for the precast products to enable the erector to operate at the speed required to meet the established schedule. Unusual hazards such as high voltage lines, buried utilities, or areas of restricted access should be declared in the invitation to bid.

9.8 Materials of Other Trades

Other building materials or work of other trades should not be installed ahead of precast erection if after installation it would interfere with precast erection.

9.9 Correction of Errors

Corrections of minor misfits are considered a part of erection even if the precast concrete is not erected by the manufacturer. Any error in manufacturing which prevents proper connection or fitting should be immediately reported to the manufacturer and the engineer and/or owner so that corrective action can be taken.

9.10 Field Assembly

The size of assembled pieces of precast concrete may be limited by transportation requirements for weight and clearance dimensions. Unless agreed upon between the manufacturer and owner, the manufacturer should provide for such field connections that will meet required loads and forces without altering the function or appearance of the structure.

All loose materials for connection of architectural precast members are normally furnished by the precast manufacturer.

9.11 Blockouts, Cuts and Alterations

Neither the manufacturer nor the erector is responsible for the blockouts, cuts or alterations by or for other trades unless so specified in the contract documents. Whenever such additional work is required, all information regarding size, location and number of alterations is furnished by the owner prior to preparation of the precast production and erection drawings.

The general contractor is responsible for warning other trades against indiscriminate cutting of concrete members.

9.12 Temporary Floors and Access

The precast concrete manufacturer or erector is not required to furnish temporary flooring for access unless so specified in the contract documents.

9.13 Patching

A certain amount of patching of product is to be expected to repair minor spalls and chips. Required patching should meet the finish requirements of the project and color should be reasonably matched. Responsibility for accomplishing this work should be resolved between the manufacturer and erector.

9.14 Safety

Safety procedures for the erection of the precast concrete members are the responsibility of the erector and must be in accordance with all local, state or Federal rules and regulations which have jurisdiction in the area where the work is to be performed, but not less than required in ANSI Standard A 10.9, American National Standard Safety Requirements for Concrete Construction and Masonry Work (American National Standards Institute, New York, New York).

9.15 Security Measures

Security protection at the job site should be the responsibility of the general contractor.

10. Interface with other trades

10.1

Coordination of the requirements for other trades to be included in the precast should be the responsibility of the owner unless clearly defined otherwise in the contract documents.

Unusual requirements or allowances for interfacing with other materials should be stated in the contract documents.

Manufacturing tolerances should be in accordance with Architect's Specification Guide, Precast Concrete Panels, Section 03, 1.02 Quality Assurance.

11. Warranty and Acceptance

11.1 Warranties

Warranties of product and workmanship have become a widely accepted practice in this industry as in most others. Warranties given by the precast concrete manufacturer and erector should indicate that their product and work meet the design criteria and specifications for the project.

In no case should the warranty of the manufacturer and erector be in excess of the warranty required by the project specifications. Warranties should in all instances include a time limit and it is recommended that this should not exceed one year.

In order to protect the interests of all parties concerned, warranties should also state that any deviations in the designed use of the product, modifications of the product by the owner and/or contractor or changes in other products used in conjunction with the manufacturer's product will cause said warranty to become null and void.

Warranty may be included as a part of the conditions of the contract agreement, or it may be presented in letter form, as requested by the owner. A sample warranty follows:

Sample warranty

Manufacturer warrants that all materials furnished have been manufactured in accordance with the design criteria and specifications for this project. Manufacturer further warrants that if erection of said material is to be performed by those subject to his control and direction, work will be completed in accordance with the same design criteria and specifications.

In no event shall manufacturer be held responsible for any damages, liability or costs of any kind or nature occasioned by or arising out of the actions or omissions of others, or for work, including design, done by others; or for material manufactured, supplied or installed by others; or for inadequate construction of foundations, bearing walls, or other units to which materials furnished by the precast manufacturer are attached or affixed.

This warranty ceases to be in effect beyond the date of _____. Should any defect develop during the contract warranty period which can be directly attributed to defect in quality of product or workmanship precast manufacturer shall, upon written notice, correct defects or replace products without expense to owner and/or contractor.

COMPANY NAME

Signature

Title

Date

11.2 Acceptance

Manufacturer should request approval and acceptance for all materials furnished and all work completed by him periodically as deemed necessary in order to adequately protect the interests of everyone involved in the project. In most cases, the size and nature of the project will dictate the proper intervals for securing approval and acceptance. Periodic approval in writing should be considered when it appears that such action will minimize possible problems which would seriously affect the progress of the project. A sample acceptance form is shown below.

12. Contract administration

12.1 General Statement

Information relative to invoicing, payment, bonding and other data pertinent to a project or material sale should be specifically provided for in the major provisions of the contract documents or in the special terms and conditions applicable to all contractual agreements between manufacturer and owner.

Contract agreements may vary widely from area to area, but the objective should be the same in all instances. The contract agreement should be written to protect the interests of all parties concerned and at the same time, be specific enough in content to avoid misunderstandings once the project begins.

The intent of this section is to recommend those things which ought to be considered, but not necessarily the form in which they should be expressed. The final statement of policies should be the result of careful consideration of all pertinent factors as well as of the normal practices in the area.

12.2 Retention

Although retention have been used for many years as a means of assuring a satisfactory job performance, it is apparent that they directly contribute to the cost of construction. frequently lead to disputes, and often result in job delays. In view of the unfavorable consequences of retention and possible abuse, it is recommended that the following procedure be followed:

1. Wherever possible, retention should be eliminated and bonding should be used as the single, best source of protection. This should apply to prime contractors and subcontractors equally.
2. Where there are no bonding requirements, the retention percentage should be as low as possible. It is recommended that this be not more than 5 percent.
3. The percentage level of any retention should be the same for subcontractors as for prime contractors on a job.
4. Release of retained funds and final payment, as well as computing the point of reduction of the retention, should be done on a line item basis, that is, each contractor or subcontractor's work considered as a separate item and the retention reduced by 50 percent upon substantial completion and the balance released within 30 days after final completion of his own work.
5. Retained funds should be held in an escrow account with interest accruing to the benefit of the party to whom the funds are due.
6. When materials are furnished FOB plant or jobsite, it is recommended that there be no retention.

12.3 Contract Agreement

1. Contract agreements should fully describe the project involved, including job location, project name, name of owner/developer, architect or other principals and all reference numbers identifying job-related information such as plans, specifications, addenda, bid number, etc.
2. Contract agreements should fully describe the materials to be furnished and/or all work to be completed by the seller.
3. All exclusions should be stated to avoid the possibility of any misunderstanding.

4. Prices quoted should be stated to eliminate any possibility of misunderstanding.
5. Reference should be made to the terms and conditions governing the proposed contract agreement. The terms and conditions may best be stated on the reverse side of the contract form. Special terms or conditions should be stated in sufficient detail to avoid the possibility of misunderstanding.
6. The terms of payment should be specifically detailed so there is no doubt in anyone's mind as to the intent. Special care should be exercised where the terms of payment will differ from those normally in effect or where they deviate from the general terms and conditions appearing on the reverse side of the contract form.
7. A statement of policy should be made with reference to the inclusion or exclusion of taxes in the stated price.
8. The proposal form stating the full intent and conditions under which the project will be performed may contain an acceptance clause to be signed by the purchaser. At such time as said acceptance clause is signed, the proposal form then becomes the contract agreement.
9. Seller should clearly state the limits of time within which an accepted proposal will be recognized as a binding contract. To protect all concerned, this time limit should not be extended beyond a reasonable period.
10. A statement indicating the classification of labor to perform the work in the field is advisable to eliminate later disputes over jurisdiction of work performed.

12.4 Terms and Conditions

The terms and conditions stated on the proposal contract agreement should include, but are not necessarily limited to, the following:

1. **Lien Laws**
Where the lien laws of a state specifically require advance notice of intent, it is advisable to include the required statement in the general terms and conditions.
2. **Specifications**
Seller should make a specific declaration of material and/or work specifications, but normally this should not be in excess of the specifications required by the contract agreement.
3. **Contract Control**
A statement should be made indicating that the agreement, when duly signed by both parties, supersedes and invalidates any verbal agreement and can only be modified in writing with the approval of those signing the original agreement.
4. **Terms of Payment**
Terms of payment should be specifically stated either on the face of the contract or in the general terms and conditions. Mode and frequency of invoicing should be so stated, indicating time within which payment is expected.
5. **Late Payment Charges**
The contract may provide for legal interest charges for late payments not made in accordance with contract terms, and if this is desired, it should be stated in the general

terms and conditions. A statement indicating seller is entitled to reasonable attorney's fees and related costs should collection proceeding be necessary may also be included.

6. Overtime Work

Prices quoted in the proposal should be based on an 8-hour day and a 5-day week under prevailing labor regulations. Provisions should be included in the contract agreement to provide for recovery of overtime costs plus a reasonable markup when the seller is re requested to provide such service.

7. Financial Responsibility

General terms and conditions may indicate the right of the seller to suspend or terminate material delivery and/or work on a project if there is a reasonable doubt of the ability of the purchaser to fulfill his financial responsibility.

8. Payment for Inventory

(a) It has become common practice to include in the contract terms and conditions provisions for the invoicing and payment of all materials stored at the plant or jobsite when deliveries or placement of said materials are delayed for more than a stipulated time beyond the originally scheduled date because of purchaser's inability either to accept delivery of materials or to provide proper job access.

(b) Under certain conditions, it may be necessary to purchase special materials and to produce components well in advance of job requirements to insure timely deliveries. When job requirements are of such a nature, it is advisable to include provisions for payment of such raw and finished inventories stored at seller's plant or on jobsites on a current basis.

9. Payment for Suspended or Discontinued Projects

The terms and conditions should provide that in the event of a discontinued or suspended project, seller shall be entitled to payment for all material manufactured including costs, overhead and profit, and not previously billed, as well as reasonable engineering and other costs incurred.

10. Job Extras

Requests for job extras should be confirmed in writing. Invoicing should be presented immediately following completion of the extra work with payment subject to the terms and conditions of the contract agreement, or as otherwise stated in the change order.

11. Claims for Shortages, Damages or Delays

Seller should, upon immediate notification in writing on the face of the delivery ticket of rejected material or shortage, acknowledge and furnish replacement material at no cost to purchaser. It is normal practice that the seller is NOT responsible for any loss, damage, detention or delay caused by fire, accident, labor dispute, civil or military authority, insurrection, riot, flood or by occurrences beyond his control.

12. Back Charges

Back charges should not be binding on the seller, unless the condition is promptly reported in writing, and opportunity is given seller to inspect and correct the problem.

13. Permits, Fees and Licenses

Costs of permits, fees, licenses and other similar expenses are normally assumed by the purchaser.

14. Bonds

Cost of bonds is normally assumed by the purchaser.

15. Taxes

Federal, State, County or Municipal, Occupation or similar taxes which may be imposed are normally paid by the purchaser.

16. Insurance

Seller shall carry Workmen's Compensation, Public Liability, Property Damage and Auto Insurance and certificates of insurance will be furnished to purchaser upon request. Additional coverage required over and above that provided by the seller is normally paid by the purchaser.

17. Services

Heat, water, light, electricity, toilet, telephone, watchmen and general services of a similar nature are normally the responsibility of the purchaser unless specifically stated otherwise in the contract agreement.

18. Safety Equipment

The purchaser is normally responsible for necessary barricades, guard rails and warning lights for the protection of vehicular and pedestrian traffic and seller's equipment. Purchaser is also normally responsible for furnishing, installing and maintaining all safety appliances and devices required on the project under U.S. Department of Labor, Safety and Health Regulations for Construction, as well as all other safety regulations imposed by other agencies having jurisdiction over the project.

19. Warranty

Seller should provide specific information relative to warranties given, including limitations, exclusions and methods of settlement. Warranties should not be in excess of warranty required by a specific project.

20. Title

Contract should provide for proper identification of title to material furnished. It is normal practice for title and risk of loss or damage to the product furnished to pass to the purchaser at the point of delivery, except in cases of FOB factory, in which event title to and risk of loss or damage to the product normally should pass to purchaser at factory pickup.

21. Shop Drawings Approval

Seller should prepare and submit to purchaser for approval all drawings. necessary to describe the work to be completed. Shop drawings approval should constitute final agreement to quantity and general description of material to be supplied. No work should be done upon material to be furnished by seller until approved shop drawings and erection drawings are in his possession.

22. Delivery

Delivery times or schedules set forth in contract agreements should be computed from the date of delivery to the seller of approved shop drawings. Where materials are specified to be delivered FOB to jobsite, the purchaser should provide labor, cranes or other equipment to remove the materials from the trucks and should pay seller for truck expense for time at the jobsite in excess of a specified time for each truck. On shipments to be delivered by trucks, delivery should be made as near to the construction site as the truck can travel under its own power. In the event delivery is required beyond the curb line, the purchaser should assume full liability for damages to sidewalks, driveways or other properties and should secure in advance all necessary permits or licenses to effect such deliveries.

23. Builder's Risk Insurance

Purchaser should provide Builder's Risk Insurance without cost to seller, protecting seller's work, materials and equipment at the site from loss or damage caused by fire or the standard perils of extended coverage, including vandalism and malicious acts.

24. Erection

Purchaser should assure that the proposed project will be accessible to all necessary equipment including cranes and trucks, and that the operation of this equipment will not be impeded by construction materials, water, presence of wires, pipes, poles, fences or framings. Purchaser should further indemnify and save harmless the seller and his respective representatives, including subcontractors, vendors, assigns and successors from any and all liability, fine, penalty or other charge, cost or expense and defend any action or claim brought against seller for any failures by purchaser to provide suitable access for work to be performed. Seller also reserves the right to discontinue the work for failure of purchaser to provide suitable access and the purchaser shall be responsible for all expenses and costs incurred.

25. Exclusions of Work to be Performed

Unless otherwise stated in the contract, all shoring, forming, framing, cutting holes, openings for mechanical trades and other modifications of seller's products should not be performed by the seller nor are they included in the contract price. Seller should not be held responsible for modifications made by others to his product unless said modifications are previously approved by him.

26. Sequence of Erection

Sequence of erection should be as agreed upon between seller and purchaser and expressly stated in the contract agreement. Purchaser should have ready all foundations, bearing walls or other units to which seller's material is to be affixed, connected or placed, prior to start of erection. Purchaser should be responsible for the accuracy of all job dimensions, bench marks, and true and level bearing surfaces. Claims or expenses arising from the purchaser's neglect to fulfill this responsibility should be assumed by the purchaser.

27. Arbitration

In view of the many difficulties and misunderstandings which may occur due to misinterpretation of contractual documents, it is recommended that the seller stipulate that all claims, disputes and other matters in question, arising out of or related to the contract, be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining, or some other rules acceptable to both parties. The location for such arbitration should be stipulated.

28. Contract Form

Contract documents should stipulate policy governing acceptance of proposal on other than the seller's form. In the event purchaser does not accept the seller's proposal and/or contract agreement, but requires the execution of a contract on his own form, it is advisable that seller stipulate in writing on the contract agreement that the contract will be fulfilled according to his originally submitted proposal. All identifying information such as proposal number, dates, etc., should be included so there can be no question of the document referred to.