Basic Engineering Design analysis in public administration

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Summary

The article covers the main points to be observed in the analysis of the basic public works project of engineering. Similarly to any other administrative action, you need to fulfill the ideals of efficiency, legitimacy and economy registered in the Federal Constitution. Deficiencies in the preparation of the instrument generate quantitative modifications, deadlines and rates, that when incidents during contractual and additives cause contracts saddled unduly Exchequer. Thus, we decided to conduct the analysis of a proposal drawn up by a body of the Federal Public Administration. Throughout this study is the importance of preplanning for contracting of works and Engineering services to avoid obstacles to the implementation contract, for surveillance and preserve the interest of the public administration.

Keywords: basic design, public administration, planning, engineering.

Introduction

The Basic project seeks to add aspects that describe the activity to be conducted as thorough as possible, involving a wide range of studies. It allows the complete understanding of the object to be bid. Being the most important item for Government works, 8,666/93 law provides the guidelines for the preparation of the basic design. The quoted law defines:

**IX** – basic design-necessary and sufficient set of elements, with appropriate precision level, to characterize the work or service, or complex of works or services object of the bidding, prepared on the basis of the indications of preliminary technical studies, to ensure the technical feasibility and the proper treatment of the environmental impact of the project, and enabling the assessment of the cost of the work and the definition of the methods and the lead time, and should contain the following elements:

1. the) development of solution of choice to provide overall view of the work and identify all its components clearly;
2. b) global technical solutions and localized, detailed enough, so as to minimize the need for reworking or variants during the phases of preparation of the Executive project and carry out the work and Assembly;
3. c) identification of the types of services to be performed and materials and equipment to be incorporated to the work, as well as their specifications to ensure the best results for the enterprise, without thwarting the competitive character for your execution;
4. d) information allowing the study and the deduction of construction methods, interim facilities and organizational conditions for the work, without thwarting the competitive character for your execution; and subsidies for setting up the plan) of bidding and management of work, understanding your programming, the strategy of supplies, monitoring standards and other data required in each case;
5. f) detailed budget of the overall cost of the work, based on quantitative services and supplies properly
evaluated;

The Court of Auditors in your Summary paragraph 261 determines the need for the elaboration of basic design suited to elements described by law No. 8,666/93 in bidding for construction and engineering services. It is still illegal to practice basic design review that change the object initially hired in other distinct characteristics and purpose.

In addition, Son (2004) in your work emphasizes that the mere elaboration of the basic design is not unique and sufficient factor for continuation of the bidding process. Formal act is required by the competent authority with due approval of the document, certifying the compliance with legal requirements and public interest. Thus, the Authority becomes responsible for judgment of legality.

It is clear that the objective of the proposal is to provide the correct quantification of materials, services and equipment, making it easy to estimate the cost, method and period of execution.

Development

The basic design in analysis about engineering work for expansion of the network of logic of an organ of the Federal Public Administration, located in the city of Manaus/Am. In short, consists of installation of pipeline networks for the passage of cables from the logical network by connecting the various sections of the site.

Given the size of the area occupied by the institution, the necessary infrastructure for the expansion in question brings challenges such as digging ditches for the installation of pipelines, construction of manholes in reinforced concrete, installation of cable trays made, power supply for the various network equipment and etc.

Preliminarily were not evidenced the Preliminary and feasibility Studies that are required by the bidding law as the basis for the basic design. Such studies constitute the first phase of the procurement planning and exist to ensure the technical feasibility of hiring. Strictly speaking, the basic design is only drawn if the hiring is judged feasible.

In your Judgment 310/2013-TCU-Plenary, the Court of Auditors States that the absence of preliminary studies leading to employment that does not meet the need of the Administration with the consequent waste of money.

Another important item missing from the project in question is the analysis of risks and environmental impacts, also required by law. According to Bitar and Ortega (1998) environmental risk analysis consists
of an estimate of the probability of occurrence of an accident and the assessment of their social, economic and environmental consequences. Thus, the environmental impact should be evaluated early in the bidding process.

Note also the absence of authorship of the pieces that make up the basic design in analysis. Federal law n° 5194/66 determines:

Art. 13. The studies, plans, projects, reports and any other work of engineering, architecture and Agronomy, whether public, private, either can only be submitted to the judgement of the competent authorities and only have legal value when their authors are professionals in accordance with this law.

Soon, as in any regulated profession, the professional exercise conditions to effective compliance with the legal provisions, is the title of the due registration, necessary training or license.

Federal law n° 6496/1977 instituting the ART (note the technical responsibility) in the provision of engineering, architecture and Agronomy, delegating your regulation, by means of resolution, the CONFEA, being exerted with the advent of the CONFEA 495/1998 Resolution and, more later, with the resolution CONFEA 1,025/2009.

Is mister to note that, in legal terms, any contract, written or verbal, for the execution of works or the provision of any professional services related to engineering, architecture or Agronomy is subject to 'ART'.

The ART sets, therefore, for legal purposes, those responsible for the technical development of engineering, architecture and Agronomy (art. 2 of the Res. CONFEA 1,025/2009), and must be processed in the Regional Council in whose jurisdiction is exercised their activity (art. 1 and 2 of both resolutions).

Bring in full, yet related to the topic, the article 10 of Decree No. 7983/2013:

Art. 10. The technical responsibility for the budget worksheets should be included in the project to integrate the notice with invitation to bid, including its possible changes.

And, the scoresheet TCU No. 260, which notes the duty of Manager require the presentation of ART:

Scoresheet TCU No. 260-it is the duty of the Manager require annotation of technical responsibility-ART for design, execution, monitoring and supervision of works and engineering services, with indication of the responsible for the preparation of plans, budget, technical specifications, composition of unit costs, physical-financial schedule and other technical parts.
In this way, the public Manager the obligation to require the presentation of ART for design, execution, supervision and/or supervision of works and engineering services, with indication of the responsible for the preparation of plans, budget, technical specifications, compositions of unit costs (discussed in topic itself)

Law No. 5,194, of 24 December 1966, your plasma art. 14 that:

Art. 14. In graphic works, specifications, estimates, opinions, reports and judicial or administrative acts, is mandatory, in addition to the signature, preceded by the name of the company, society, institution or business that interest you, the explicit mention of the professional title that the Subscribe and the number and portfolio number referred to in article 56.

Project canvas also lacks physical-financial schedule, which required item. He represents the schedule of activities to be carried out, considering the duration of the services and the values to be spent. This document helps in estimating resources to be used over years.

According to the Manual of recommendations of TCU (2013) "the physical-financial schedule must be drawn up in such a way as to serve as a reference, in later stage, for the analysis of the proposals submitted by the companies participating in the bidding contest. The same Manual still warns that whenever the term or execution steps are changed after the beginning of construction work, it is necessary to make adequate physical-financial schedule.

Another essential item is the memorial, which is the document annexed to the project, which describes in detail the computation until you reach the end result presented here. The calculation is of the utmost importance to detect problems or miscalculations in the project implemented, as well as for better understanding when changes are required or for other professional project management.

Although not set up as required, it is good practice and transparency the ABC Curve after the consolidation of a solid budget. According to Carvalho (2002) the ABC curve is a method of classification of information that lists items of greater importance or impact on the budget.

The descriptive memorial gift in the project is not comprehensive enough as for the service to be performed, not exhausting the necessary technical details. A descriptive memorial is a document that details the entire project to be carried out, where are related, one by one, all items of the building to be built. Structures, finishes, installation, everything should be informed in accordance with what is taking place in the work.

Is valid remember that the memorial is not the project itself. The memorial is intended to tell you in detail
all the development of the project. The 01/2006 Technique Orientation of the Brazilian Institute of public works accounts for:

Detailed description of the designed object, in the form of text, where are presented the technical solutions adopted, as well as their justifications, necessary for the full understanding of the project, complementing the information contained in the projects.

So, the services to be contracted shall be performed strictly according to the given project, which lays down the minimum conditions to be observed.

The breakdown of costs is of fundamental importance and mandatory compliance by who produces engineering projects, either to a public or private work.

Legal references do not exclude the need for spreadsheet that express the composition of all the unit costs of the services, according to article 7, paragraph 2, of the law 8,666/93, namely, detailing all the parameters used for the calculation of costs defined in Chapter 5: value of inputs, productivity coefficients and social charges. (ALTOUNIAN, 2013, page. 166).

According to Altounian (2013), in the definition of prices must be in the correct identification of all parameters, since the misunderstanding in any parameter may lead to pricing beyond unreasonable.

The only verification of the composition of the cost of service is not enough, since the hiring of the company will be offered prices, in other words, there is a need for detailed analysis of the composition of the BDI to be included in the budget. All parcels must be justified, and it is not reasonable to define a percentage of BDI without knowledge of your composition and respective values.

Art. 9-the global reference price will be the resulting overall reference cost plus the value corresponding to the BDI, which should show in your composition, at least:

I-assessment rate of central administration;

II-percentage of taxes levied on the price of the service, excluding those of direct and personalística nature that saddled the hired;

III-risk rate, insurance and guarantee of the enterprise; and

IV-profit Rate.
• 1 proven technical and economic infeasibility of installment of the object of the bidding, in accordance with the legislation in force, the supply of materials and equipment of specific nature which may be supplied by companies with their own specialities and various and representing a significant percentage of the overall price of the work must submit incidence of BDI reduced rate relative to the rate applicable to the other items.

• 2 in the case of the supply of equipment, systems, and materials in which the contractor does not act as an intermediary between the manufacturer and the public administration or projects, logistics and manufacturing non-standard and not framed as regular and manufacturing items continued national and international markets, the BDI can be calculated and justified based on the complexity of the acquisition, with exception to the rule provided for in § 1.

Still, according to Precedents of TCU, highlighted below, is mister BDI's presentation, since this part of the budget

Docket No. 258-unit cost compositions and the detailing of social charges and the BDI in the budget that make up the basic design of the works or engineering service, be included in the annexes to the notice with invitation to bid and the proposals of the bidders and cannot be specified measure before use of the phrase ´ verba ´ or generic units.

Docket No. 253-proven technical and economic infeasibility of installment of the object of the bidding, in accordance with the legislation in force, the supply of materials and equipment of specific nature which may be supplied by companies with their own specialities and several significant percentage and representing the overall price of the work must submit Rebate rate and incidence Indirect Costs – reduced rate BDI apply to other items.

Was not presented the BDI's value to be applied to projects, being, including necessary detail the items of your composition, described in items from I to IV, according to requirement of art. 9 of 8666/93 law and legislation referenced in this topic. It wasn't explained the issue of social charges, costs for items relating to transport, food, personal protective equipment-PPE, collective protection equipment-EPC, tools that will be used, insurance, definition of Collective labor conventions – CCT ´ s and the costs thereof.

Conclusion

The basic design in analysis has flaws that may negatively affect the performance of the hired object. There is evidence of careless with the planning phase. As coaches, we have a duty to warn about the need of these projects are widely discussed and thought, due to the numerous aspects that must be met, only focusing on the best techniques of engineering and in the provisions of the law and the courts.

As the plasma content of that article, numerous points in the project are not detailed enough and/or planned, and, therefore, we have forwarded our considerations in order to contribute to the information of
managers about the position (ranking) of the projects analysed, contributing so that they do not incur any rash and attitudes which may cause damage to the Exchequer.

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