

Development of Standard Operating Procedures in Community Sports Facility Construction Work by Involving Community Participation

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ABSTRACT : *The development of community sports facilities aims to improve the quality of health, fitness, and social activities in the community. However, during implementation, various problems are often found, such as the lack of a structured management system, poor construction quality control, and minimal community participation in the construction process and in the utilization of sports facilities. Therefore, a system is needed that can integrate standard operating procedures for the quality management of sports facility construction with community involvement effectively and transparently. This study aims to develop a Standard Operating Procedure for the development of community sports facilities that involves community participation as part of the construction implementation and evaluation process. The research method uses a qualitative approach with data collection techniques through interviews and document analysis. Research data were obtained through observation, interviews with sports facility managers, and related stakeholders. The developed standard operating procedures are designed to support the process of monitoring implementation, quality control, and community participation mechanisms in providing input, reporting, and evaluation of sports facility construction. The results of the study indicate that the developed standard operating procedures are able to improve the effectiveness of community sports facility construction management, strengthen the transparency of the construction process, and encourage active community involvement in the supervision and utilization of sports facilities. This implementation is expected to become a model for more participatory, accountable, and sustainable management of community sports facilities. The development of this standard operating procedure is based on the Circular Letter of the Minister of Public Works and Public Housing of the Republic of Indonesia No. 15/SE/M/2019 concerning Procedures for Quality Assurance and Quality Control of Construction Works.*

KEYWORDS - *Community Sports Facilities Development, Quality Control, Standard Operating Procedures, community participation*

I. INTRODUCTION

1.1. Background

In the context of national policy, sports development in Indonesia is regulated according to Law of the Republic of Indonesia Number 11 of 2022. Sports infrastructure development should support public participation and community welfare, which emphasizes that sports activities must be carried out systematically, planned, integrated, and sustainable. The development of community sports facilities requires a structured, quality-based management approach, as stipulated in Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia No.15/SE/M/2019.



Figure 1. Illustration of Community Sports Facilities

The development of community sports facilities often faces various problems, such as non-compliance with technical specifications and low facility utilization after completion. These problems are generally caused by weak quality control systems, low information transparency, and minimal community involvement in the planning and

monitoring process. Community participation is a crucial element in community-based development, which emphasizes active citizen involvement in every stage of development.

Advances in information technology offer significant opportunities to improve the effectiveness of development management. Management information systems enable the planning, implementation, monitoring, and evaluation processes to be integrated, transparent, and in real time. The concept of Management Information System, according to Malik, P., & Malik, R. (2012), is an organizational information system that supports not only operations but also management processes by providing the right information to the right people at the right time and at the right cost. Information is said to be right when it has all the attributes such as time accuracy, accuracy and resolution, adequacy, consistency and uniformity, conciseness, based on needs, economy, predictability. The right person means one information is not for all decision makers, and all information is not for one decision maker. Information systems can be a strategic instrument to ensure accountability, efficiency, and quality of development results.

1.2. Research Purposes

This study aims to identify the stages of work activities, determine the parties involved in quality control at each stage, and identify the quality objectives for each activity in the construction of community sports facilities. The findings are expected to support quality management in the construction of community sports facilities., identifying the stages of activities in the work of building community sports facilities, determining community participation in the stages of work on building community sports facilities, and identifying the quality targets of each activity in the work of building community sports facilities, development of community sports facilities, and to develop standard operating procedures in the stages of development work by involving community participation.

1.3. Operational Model

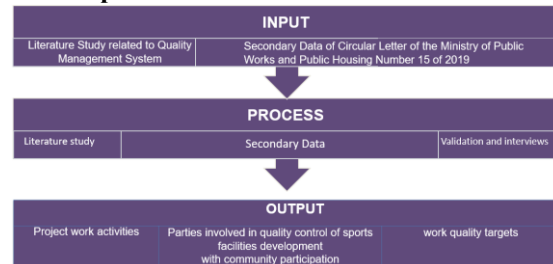


Figure 2. Operation Model

II. THEORETICAL REVIEW

2.1 Stages of construction work based on Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia No.15/SE/M/2019

Quality assurance and quality control activities begin from the signing of the contract until the final handover date and are divided into three stages: the first is the Construction Work Preparation Stage; the second is the Construction Work Implementation Stage; and the third is the Construction Work Completion Stage.

The preparation stage is divided into several stages, including the handover of the work site, issuance of the work order, a preparatory meeting for contract implementation, down payment, and mobilization of labor, materials, and work equipment.

The construction work implementation stage consists of the initial joint work inspection, submission of requirements for commencement of work, material testing plans, work quality supervision, changes to work in the field, quality control, work progress reporting, acceptance and payment of work results, critical contract control, and resolution of work issues. Meanwhile, the construction work completion stage consists of several stages, including the final work inspection, first handover of work, final work testing, work maintenance plan, issuance of the first handover report, and documentation of work results, ased on Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia No.15/SE/M/2019, quality assurance and quality control activities begin from the signing of the contract until the final handover date and are divided into three stages: the first is the construction work preparation stage; the second is the construction work implementation stage; and the third is the

construction work completion stage. The preparation stage is divided into several stages, including the handover of the work site, issuance of the work order, a preparatory meeting for contract implementation, down payment, and mobilization of labor, materials, and work equipment.

The construction work implementation stage consists of the initial joint work inspection stage, submission of requirements for commencement of work, material testing plans, work quality supervision, changes to work in the field, quality control, work progress reporting, acceptance and payment of work results, and critical contract control and resolution of work issues. Meanwhile, the construction work completion stage consists of several stages, including the final work inspection, first handover of work, final testing, work maintenance plan, issuance of the first handover report, and documentation of work results.

The implementation of quality targets in sports facility construction work can be seen from the existence of quality planning, implementation control, and periodic evaluation of project performance.

Table 2.1 Stages of Construction Work and Quality Objective

No. Item	Stages of Construction Work Base	Quality Objectives
1	The handover of the work site was carried out clearly and documented.	The work location has been mutually agreed upon in accordance with the planning provisions.
2	The Work Start Order (SPMK) was issued according to procedures.	The Commitment Officer issues a Work Order based on applicable regulations.
3	The Contract Implementation Preparation Meeting (PCM) was carried out effectively.	The Commitment Officer holds an effective contract preparation meeting.
4	The Advance Payment was made.	Advance payments are made in accordance with applicable regulations.

5	The mobilization of labor, materials, and equipment was carried out on time.	Labor and materials are in accordance with the technical specifications of the work.
6	The project's administrative readiness was met before implementation.	The Supervisor reviews the activity administration and reports to the Commitment Officer.
7	The Initial Work Inspection (MC-0) was carried out jointly.	Initial inspections are conducted by agreeing to a mutual agreement form.
8	The Request for Work was submitted, the Working Drawings were submitted, the Materials were submitted, the Work Methods were reviewed, the Occupational Health and Safety (K3) was reviewed, and the mobilization schedule was also submitted.	The project implementer submits requirements for starting work to the Commitment Officer.
9	The Testing and Inspection Plan for Materials was carried out.	Material testing and inspection are based on specifications.
10	The Work Supervision was carried out effectively.	The project supervisor reports the results of the inspection effectively.
11	The Field Work Changes (CCO) were made to meet project requirements.	The implementer reports any changes to the work and submits them to the supervisor.
12	Quality control was carried out consistently.	The Quality Controller monitors the work.
13	The Work Progress was reported regularly and accurately.	The Supervisor reports progress periodically to the Commitment Officer

14	Acceptance and Payment for Work Results.	Receipts and payments are made in accordance with applicable regulations.
15	Critical Contract	The Supervisor reports any obstacles to the Commitment Officer.
16	Issues in the Field Were Addressed Quickly and Accurately.	The Supervisor and the Commitment Officer handle project issues
17	The Final Work Inspection was Complete.	Inspections are completed in accordance with existing specifications.
18	The First Handover (PHO) was carried out according to procedures.	All parties agree to the first handover.
19	Final Work Testing.	Final work testing is conducted and reported to the Commitment Officer.
20	Maintenance Plan.	Maintenance is carried out in accordance with regulations.
21	Issuance of the First Handover Report. Work	The Commitment Officer issues the first handover report.
22	Documentation of work results is properly stored.	Each stage of the work is well documented.

2.2 Stakeholders involved and responsible for quality control at every stage of community sports facility construction work

Quality control plays a crucial role in ensuring the success of construction projects. Construction projects with a strong quality control system tend to deliver better quality work and a lower risk of construction failure.

According to Harold Kerzner, project success is measured not only by completing the project on time and within budget, but also by the project's ability to meet established quality standards (Kerzner, 2017).

Therefore, the implementation of a quality control system in accordance with government guidelines, as stated in the Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia Number 15/SE/M/2019 is very important to improve the quality of construction project implementation in Indonesia. Stakeholders in sports facility development projects can be classified into several main groups, as follows:

2.2.1 Government

The government is the primary stakeholder in the development of community sports facilities, particularly in providing policies, funding, and project oversight.

According to the Ministry of Youth and Sports of the Republic of Indonesia, the government is responsible for providing adequate sports facilities and infrastructure to increase community participation in sports activities (Ministry of Youth and Sports of the Republic of Indonesia, 2021).

2.2.2 Contractors and Consultants

Contractors and consultants are responsible for the technical implementation of sports facility construction. Yu et al. (2019) stated that various stakeholders, such as contractors, consultants, and project owners, have a significant influence on the occurrence of quality defects in construction projects. Consultants typically play a role in project planning and design, while contractors are responsible for implementing the physical construction. According to Frederick E. Gould and Nancy E. Joyce, the success of a construction project is greatly influenced by good coordination between the project owner, consultant, and contractor (Gould & Joyce, 2014).

2.2.3 Community

The community is a crucial stakeholder in sports facility projects because they are the primary users of the facilities being built. Therefore, community involvement in the planning and management of sports facilities is essential.

Cornwall (2008) explains that community participation has various meanings and practices, ranging from mere symbolic involvement to active participation in development decision-making.

III. RESEARCH METHOD

This research utilized archival analysis of Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia Number 15/SE/M/2019 and expert interviews. Archival analysis was used to examine the work stages in the facility construction process. Expert interviews were used to assess the work stages relevant to the construction of community sports facilities, identify the appropriate stages, stakeholders involved in the construction of sports facilities, and the quality objectives for each stage.

In the first stage, data collection and analysis were conducted by validating the construction work stages based on Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia Number 15/SE/M/2019, which are relevant to the construction of community sports facilities, through validation with five experts.

In the second stage, data collection and analysis aimed to validate the stakeholders involved as part of quality control in the construction of community sports facilities, through validation with five experts.

The third stage of data collection and analysis aimed to identify the quality objectives for each stage of the construction of community sports facilities through interviews and validation with five experts, thereby improving the quality of the construction of community sports facilities.

Fourth, the expert validation results are used to develop standard operating procedures at each stage of the work, involving community participation. The resulting system workflow serves as the basis for developing a quality management information system.

Table 3.1 Expert Profile Data Table

No	Expert	Position	Institution	Educational	Length Of Service (Years)
1	P1	Head of Department	Government	Bachelor's Degree	5

2	P2	Head of Division	Government	Bachelor's Degree	5
3	P3	Consultant Expert	Consulting Firm	Bachelor's Degree	5
4	P4	Project Implementer	Contractor	Bachelor's Degree	5
5	P5	Community Representative	Community Organization	High School	1

Validation of the evaluation instrument was conducted using Aiken's V method to measure the content validity of the evaluation items. A panel of experts was given the evaluation instrument to assess its relevance using a 5-point scale (1 = irrelevant, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = very relevant). Afterward, an Aiken's V value was calculated for each item to assess the extent to which the instrument met the validity criteria.

The content validity analysis of the instrument in this study used Aiken's (1985) formula as follows:

$$V = \sum S / [n(C-1)]$$

$$S = R - Lo$$

V = Aiken index
 S = score given by the assessor minus the lowest score in the category
 R = score given by the assessor
 Lo = lowest assessment score (1)
 C = highest assessment score (5)
 n = number of validators (assessors)
 $V < 0,60 \rightarrow$ invalid
 $V \geq 0,60 \rightarrow$ valid

IV. RESEARCH RESULT AND DISCUSSION

The content validity of the instruments in this study was determined using expert consensus. Expert consensus is used to determine content validity because a test or non-test instrument has been proven accurate if experts believe it will measure the abilities it is intended to measure. Content validity scores were obtained from five assessors based on the focus group discussions, using the Aiken formula.

4.1 Stages of construction work activities

The table below shows the results of expert validation regarding the stages of construction work based on the Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia Number 15/SE/M/2019 which corresponds to the stages of work on building community sports facilities.

Table 4.1 Expert validation results of work stages

No. Item	Σs	Aiken_V	Category
1	16	0,80	Valid
2	18	0,90	Valid
3	15	0,75	Valid
4	6	0,30	Invalid
5	15	0,75	Valid
6	17	0,85	Valid
7	19	0,95	Valid
8	15	0,75	Valid
9	19	0,95	Valid
10	14	0,70	Valid
11	19	0,95	Valid
12	19	0,95	Valid
13	18	0,90	Valid
14	18	0,90	Valid
15	19	0,95	Valid
16	17	0,85	Valid
17	18	0,90	Valid
18	18	0,90	Valid
19	18	0,90	Valid
20	16	0,80	Valid
21	19	0,95	Valid
22	17	0,85	Valid

The table below shows the results of expert validation of the construction work stages, based on Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia No.15/SE/M/2019, which corresponds to the stages of construction of community sports facilities. The results indicate that at one stage, the advance payment is invalid.

4.2 Community participation in the stages of work on building community sports facilities

The following are the results of expert validation regarding community participation at each stage of community sports facility development.

Table 4.2 Expert validation results of community participation in work stages

No. Item	Σs	Aiken_V	Category
1	16	0,8	Valid
2	2	0,1	Invalid
3	9	0,45	Invalid
4	2	0,1	Invalid
5	16	0,8	Valid
6	8	0,4	Invalid
7	17	0,85	Valid
8	5	0,25	Invalid
9	16	0,8	Valid
10	13	0,65	Valid
11	18	0,9	Valid
12	18	0,9	Valid
13	16	0,8	Valid
14	10	0,5	Invalid
15	5	0,25	Invalid
16	5	0,25	Invalid
17	15	0,75	Valid
18	16	0,8	Valid
19	15	0,75	Valid
20	5	0,25	Invalid
21	8	0,4	Invalid
22	19	0,95	Valid

The table shows that there are twelve stages of work activities in which the community participates, including: the handover of the work site, mobilization of labor, materials, and equipment, initial work inspection, work supervision, the field work changes, quality control, work progress, final work inspection, the first handover, final testing, and documentation of work.

4.3 Quality targets of each activity in the work of building community sports facilities, and the development of community sports facilities.

This table shows the results of expert validation regarding quality targets at each stage of construction work based on the Circular Letter of the

Minister of Public Works and Housing of the
 Republic of Indonesia Number 15/SE/M/2019.

Table 4.3 Expert validation results for
 quality targets at work stages

No. Item	Σs	Aiken_V	Category
1	19	0,95	Valid
2	17	0,85	Valid
3	17	0,85	Valid
4	17	0,85	Valid
5	17	0,85	Valid
6	18	0,9	Valid
7	19	0,95	Valid
8	18	0,9	Valid
9	17	0,85	Valid
10	19	0,95	Valid
11	17	0,85	Valid
12	18	0,9	Valid
13	16	0,8	Valid
14	19	0,95	Valid
15	17	0,85	Valid
16	19	0,95	Valid
17	19	0,95	Valid
18	17	0,85	Valid
19	18	0,9	Valid
20	18	0,9	Valid
21	17	0,85	Valid
22	17	0,85	Valid

4.4 Development of standard operating procedures in the stages of construction work by involving community participation

The following is the development of standard operating procedures for quality control of community sports facility construction work based on the results of data validation regarding the stages, parties involved in the community sports facility construction work, and quality targets that must be achieved in the sports facility construction work, which will then become a workflow as part of the development of a quality management information system.

4.4.1. Handover of The Work Site

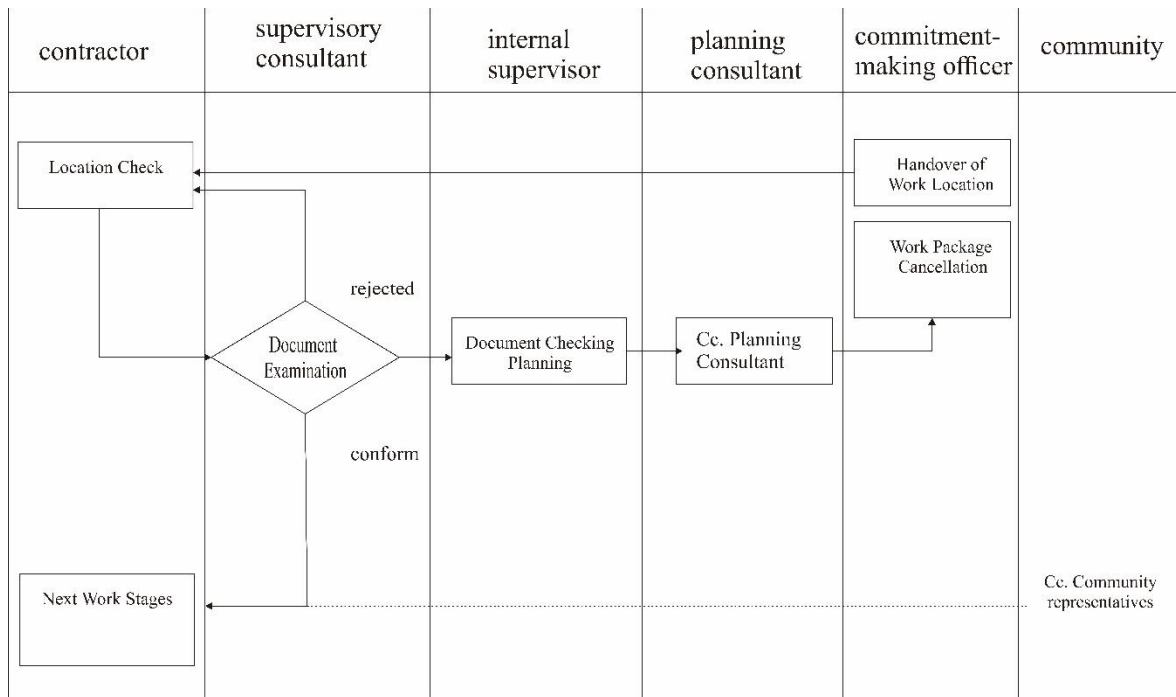


Figure 4.1. flowchart The handover of the work site

Workflow: Preparation → System Input → Verification → (Revision/Continue) → Review → Approval → Documentation → Construction Site

4.4.2. The Work Start Order (SPMK) was issued according to procedures.

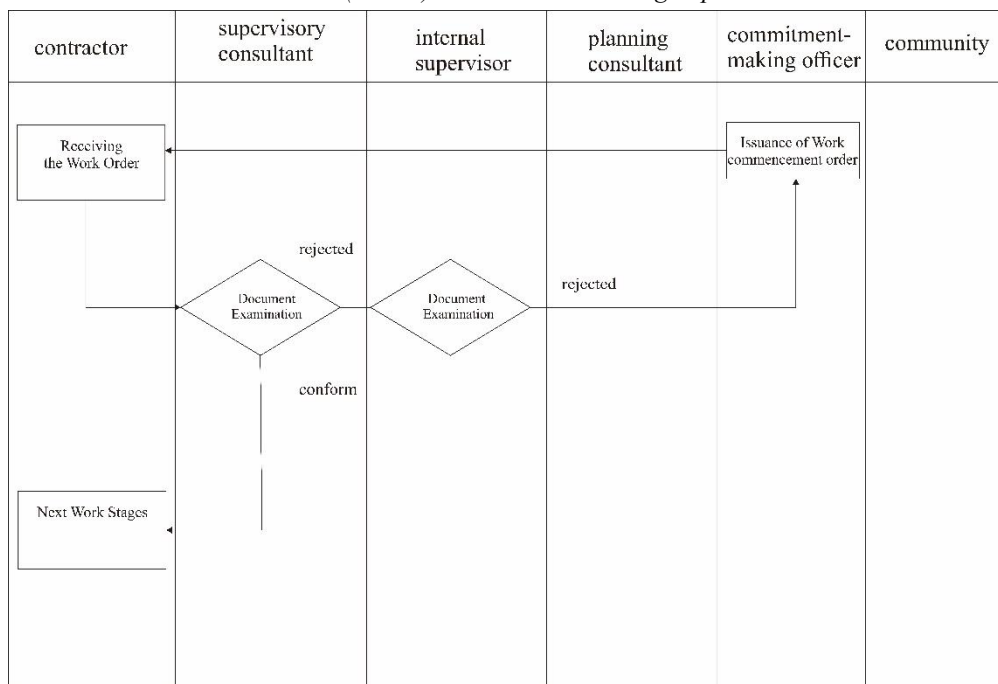


Figure 4.2. flowchart Work Start Order (SPMK)

Workflow : Check Prerequisites → Data Input → Administrative Verification → Technical Verification → PPK Approval → SPMK Generation → Distribution → Archive → Start Work

4.4.3. The Contract Implementation Preparation Meeting (PCM)

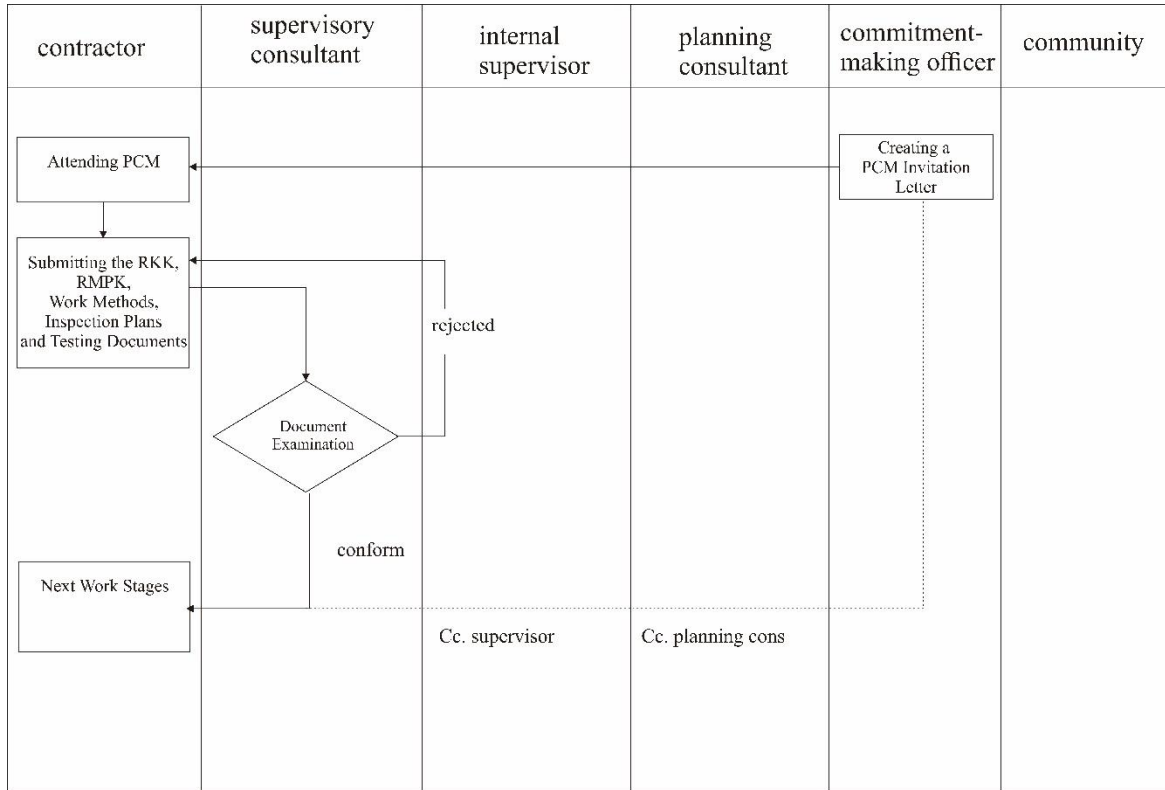


Figure 4.3. flowchart The Contract Implementation Preparation Meeting (PCM)

Workflow : Scheduling → Invitation → Document Preparation → PCM Implementation → Minutes → Verification → Finalization → Follow-up

4.4.4. The Advance Payment

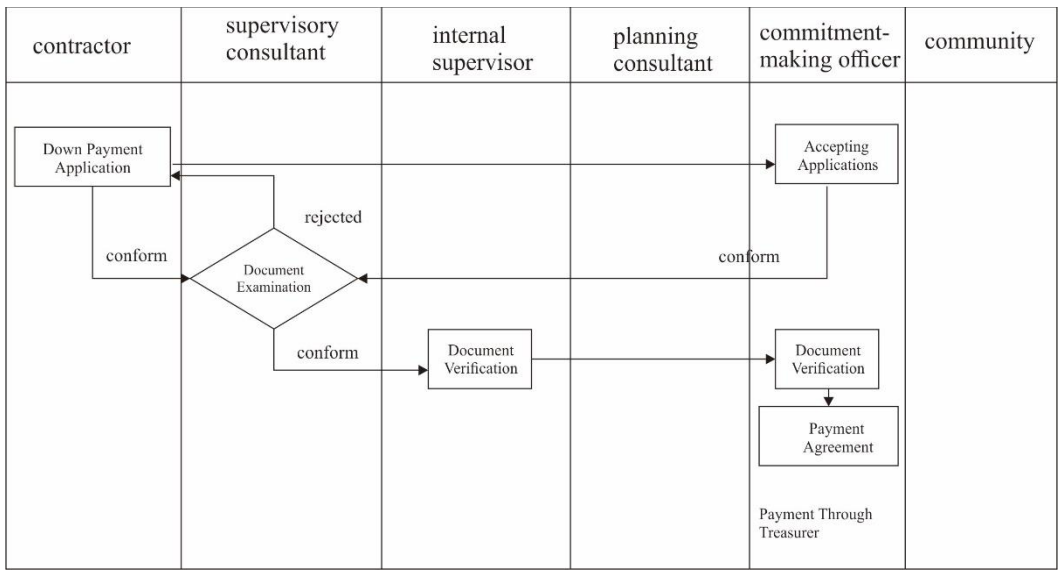


Figure 4.4. flowchart Advance Payment

Workflow : Submission → Verification → (Revision / Agree) → Payment

4.4.5. The Mobilization of Labor, Materials, and Equipment

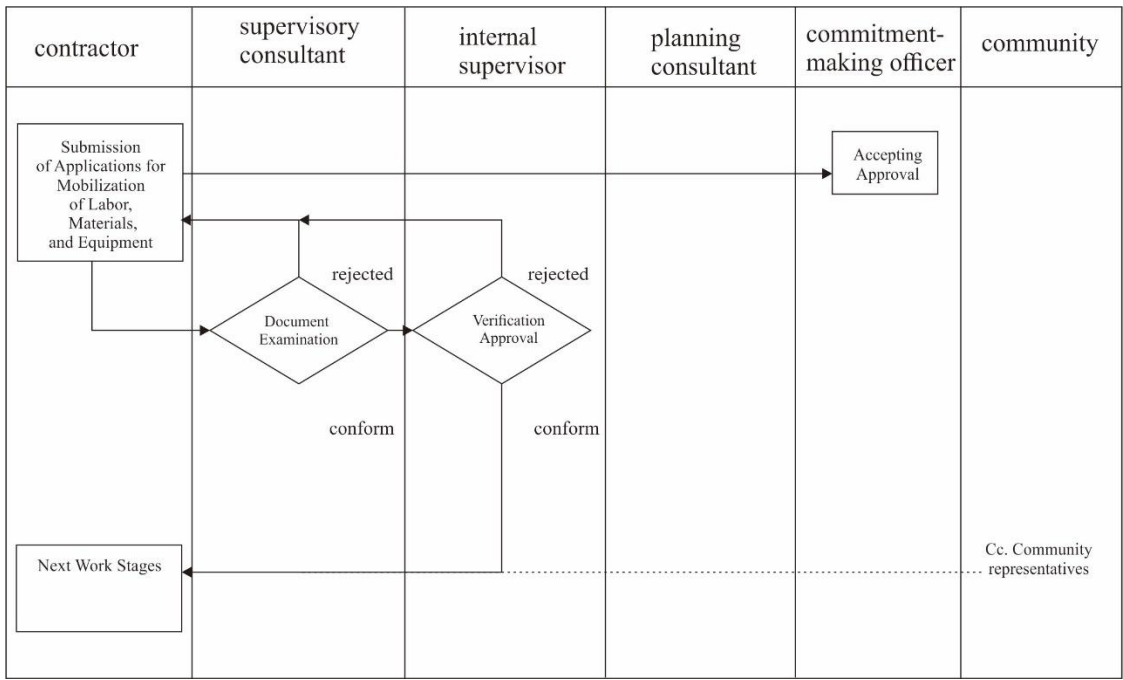


Figure 4.5. flowchart The Contract Implementation Preparation Meeting (PCM)

Workflow : Mobilization Submission → Verification → Approval → Mobilization → Monitoring → Time Validation → Documentation

4.4.6. The Project's Administrative Readiness Was Met Before Implementation.

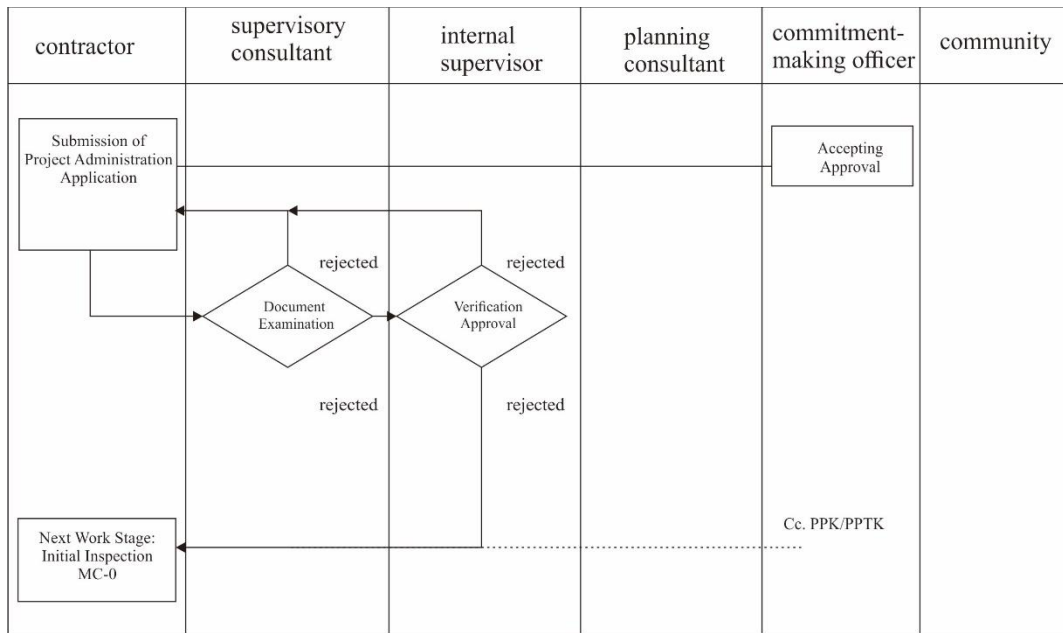


Figure 4.6. flowchart The Project's Administrative Readiness

Workflow : Checklist → Upload Documents → Administrative Verification → Technical Verification → System Validation → Approval → Ready for Implementation

4.4.7. The Initial Work Inspection (MC-0)

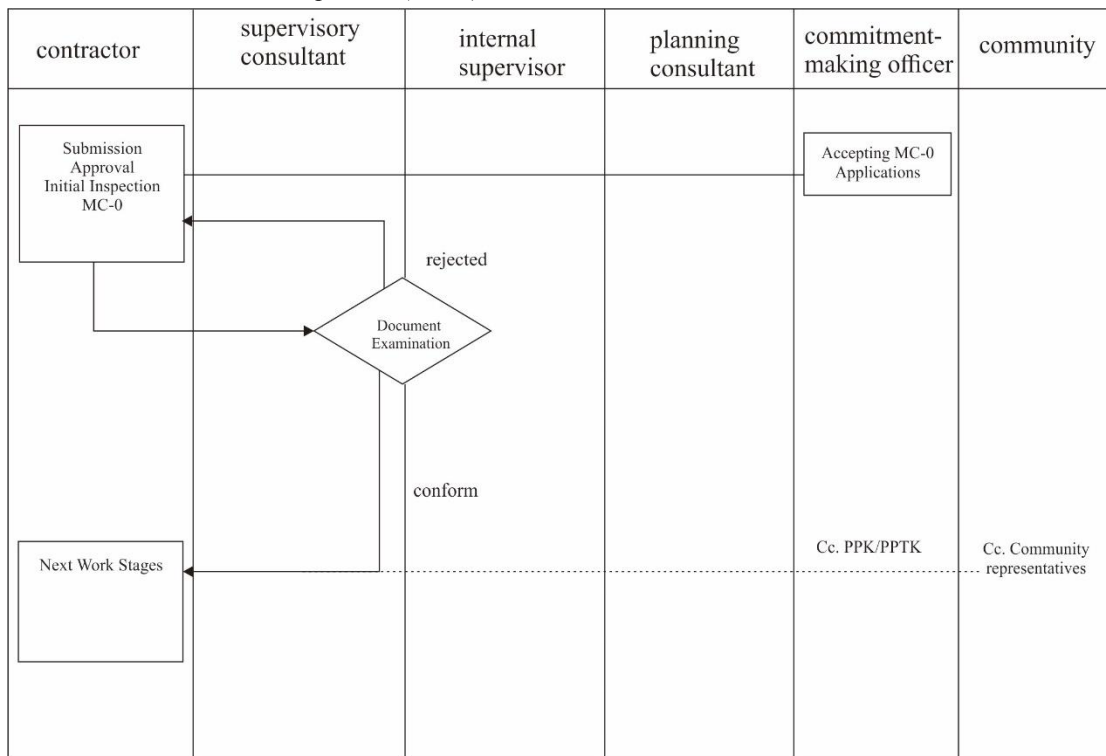


Figure 4.7. flowchart Initial Work Inspection (MC-0)

Workflow : Scheduling → Invitation → Preparation → Joint Inspection → Recording → Verification → Approval

4.4.8. The Request for Work was submitted, the Working Drawings, the Materials, the Work Methods were reviewed, and the Occupational Health and Safety (K3) were reviewed. The mobilization schedule was also submitted.

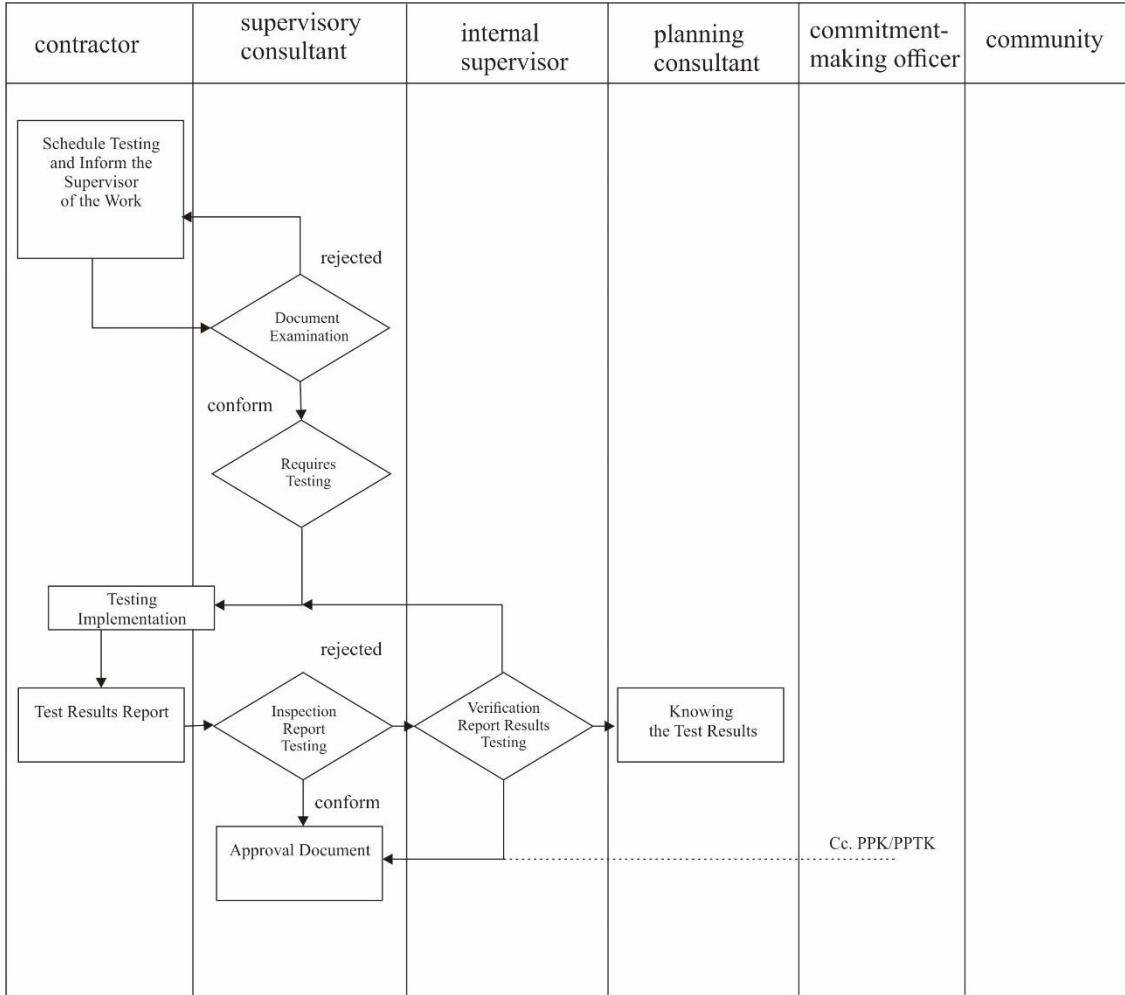


Figure 4.8. flowchart Request for Work

Workflow : Submission → Upload Documents → Administrative Verification → Technical Review → (Revision) → Approval → Work Permit

4.4.9. The Testing and Inspection Plan for Materials was carried out.

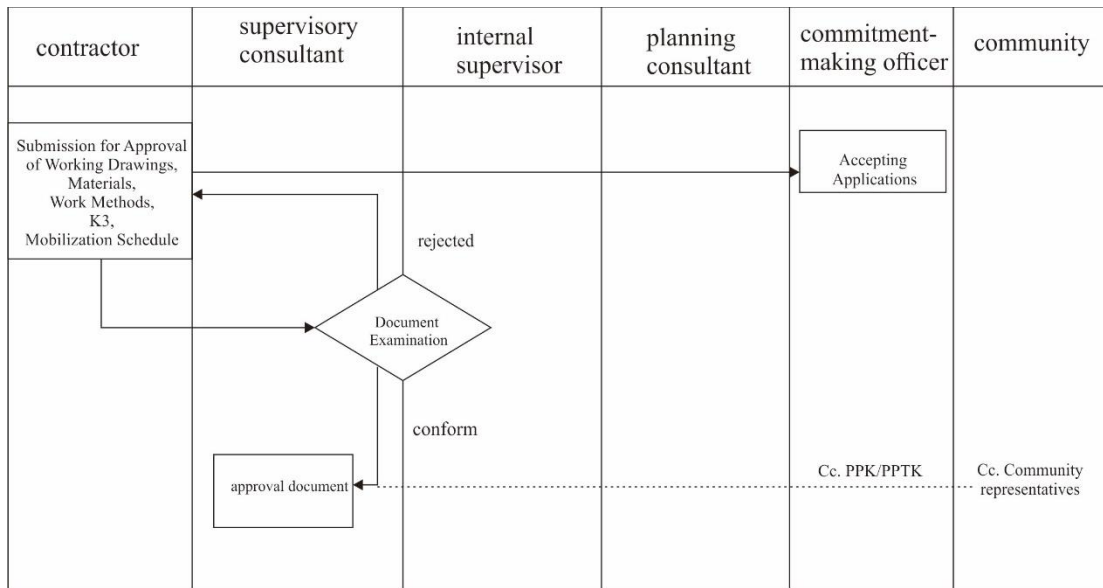


Figure 4.9. flowchart The Testing and Inspection Plan for Materials

Workflow : Preparation → Review → Approval → Submittal Material → Inspection → Testing → Evaluation → Approval

4.4.10. The Work Supervision was carried out effectively.

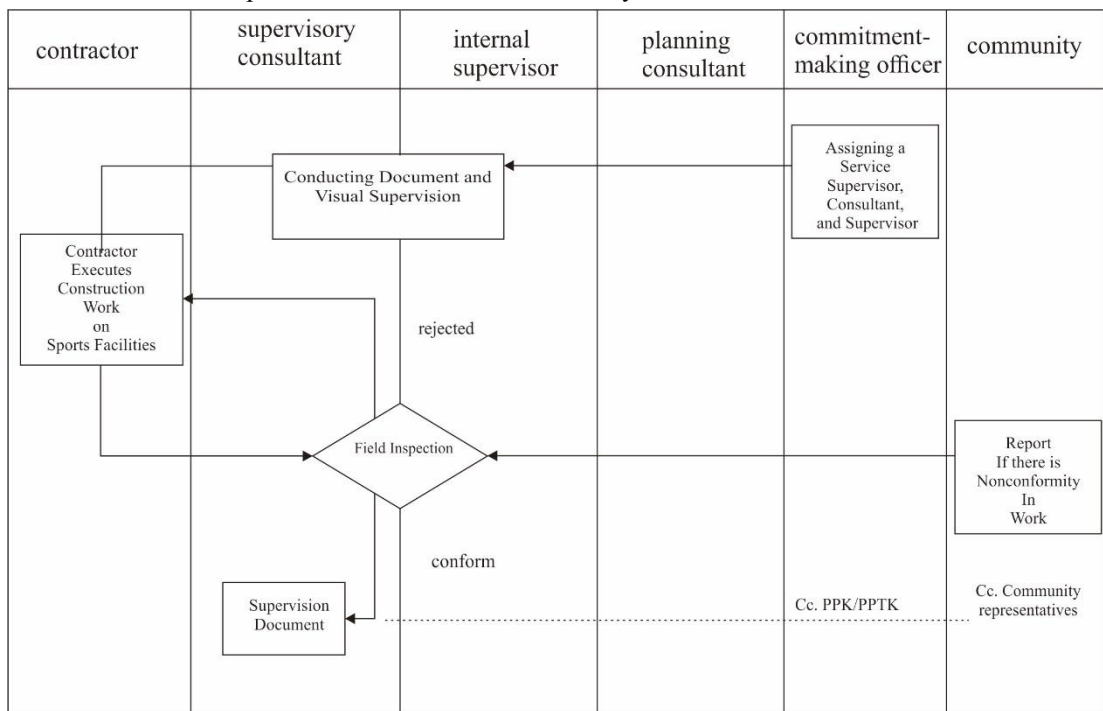


Figure 4.10. flowchart The Work Supervision

Workflow : Inspection → Recording → Identification → (Compliant / Non-Compliant) → Instruction → Repair → Verification → Report



4.4.11. The Field Work Changes (CCO) were made to meet project requirements.

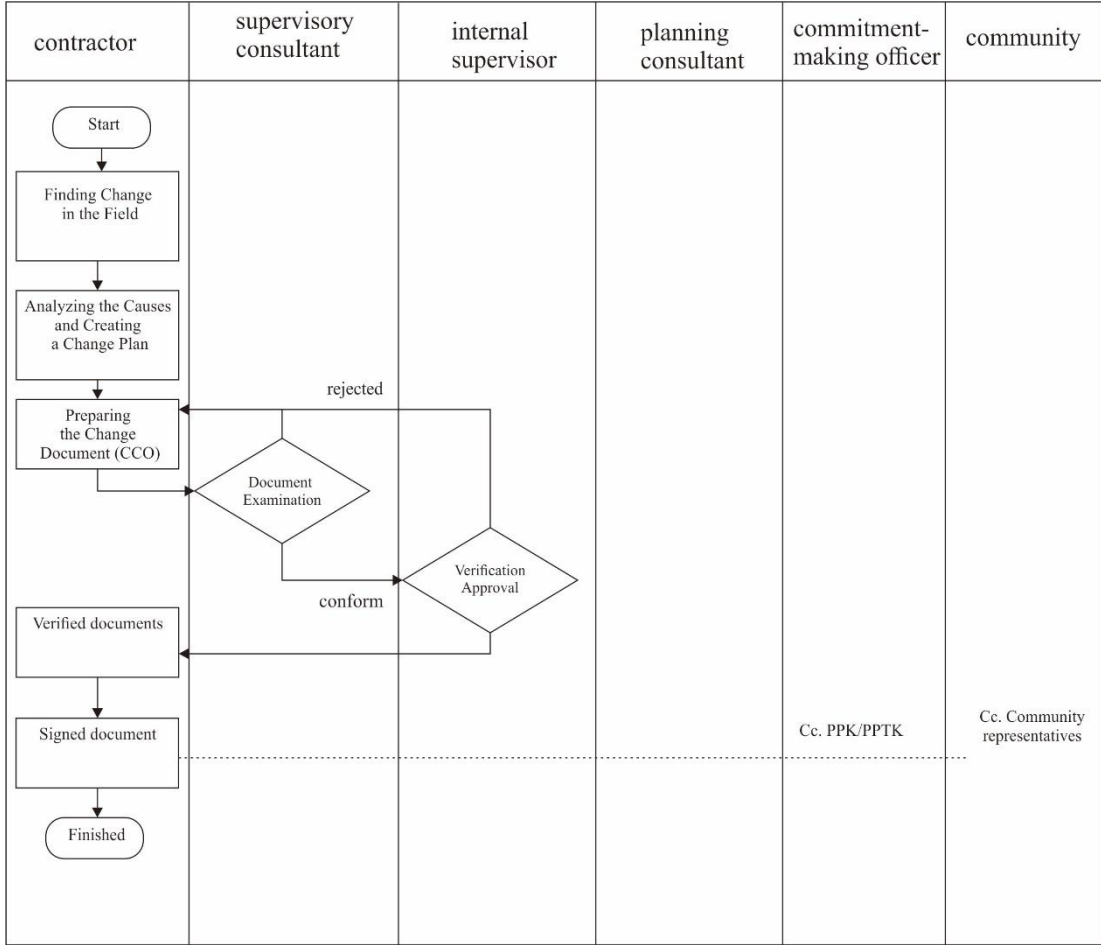


Figure 4.11. flowchart The Work Supervision

Workflow : Identification → Submission → Verification → Analysis → Review → Approval → Addendum → Implementation → Monitoring

4.4.12. Quality Control was Carried Out Consistently.

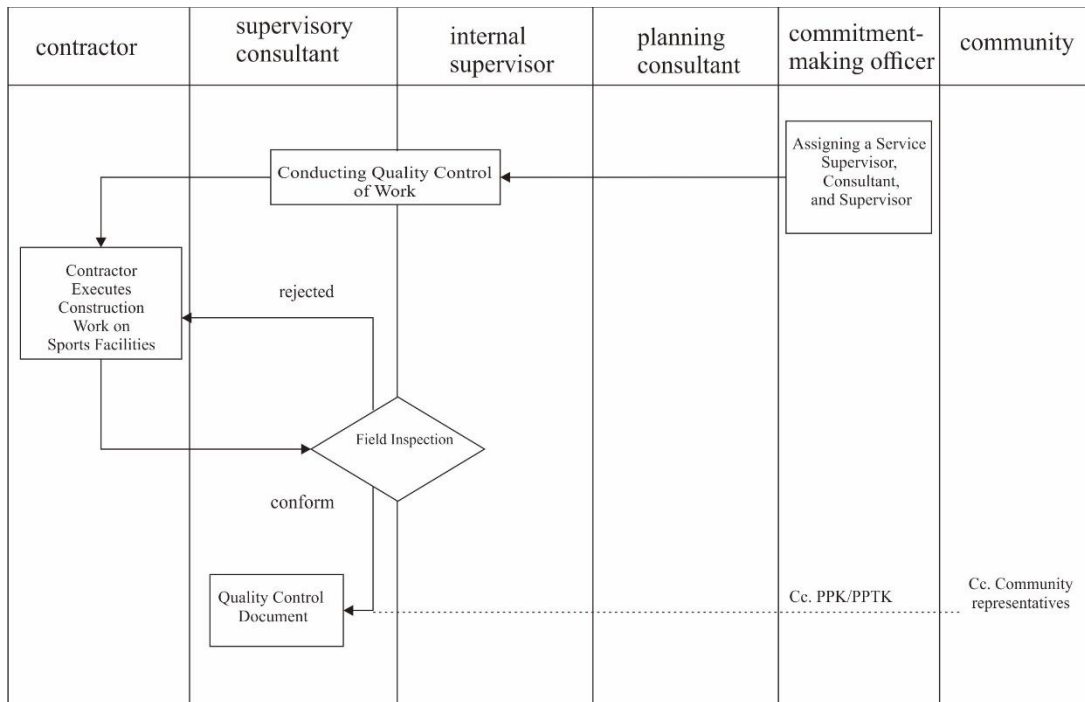


Figure 4.12. flowchart Quality Control

Wokrflow : QC Plan → Inspection → Recording → Evaluation→ (Conformance / Non-Conformance) → Correction → Verification → Report → Monitoring

4.4.13. The Work Progress was reported regularly and accurately.

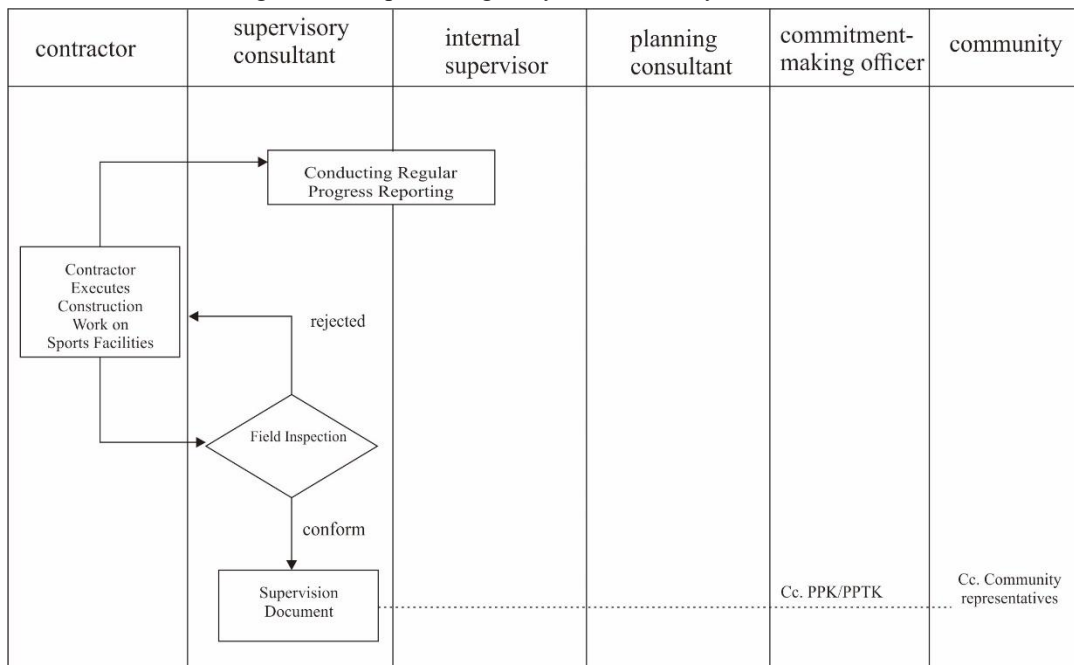


Figure 4.13. flowchart The Work Progress

Workflow : Data Collection → Input → Validation → Verification → Analysis → Approval → Report

4.4.14. Acceptance and Payment for Work Results.

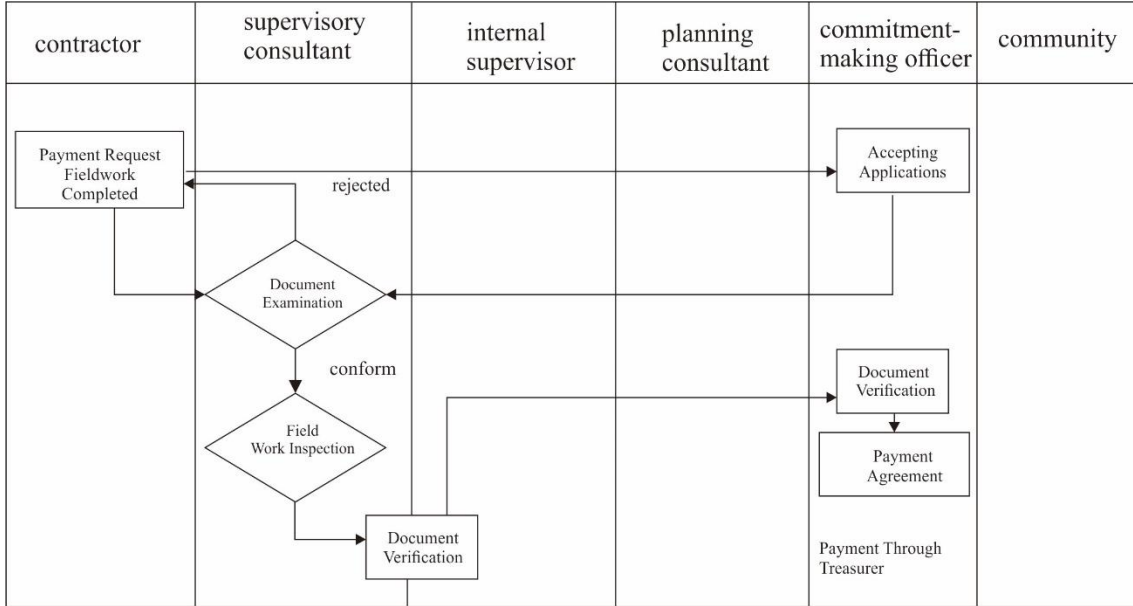


Figure 4.14. flowchart Acceptance and Payment for Work Results

Workflow : Submission → Verification → Inventory → Quality Control → Calculation → Approval → Payment

4.4.15. Critical Contract Issues in the Field Were Addressed Quickly and Accurately

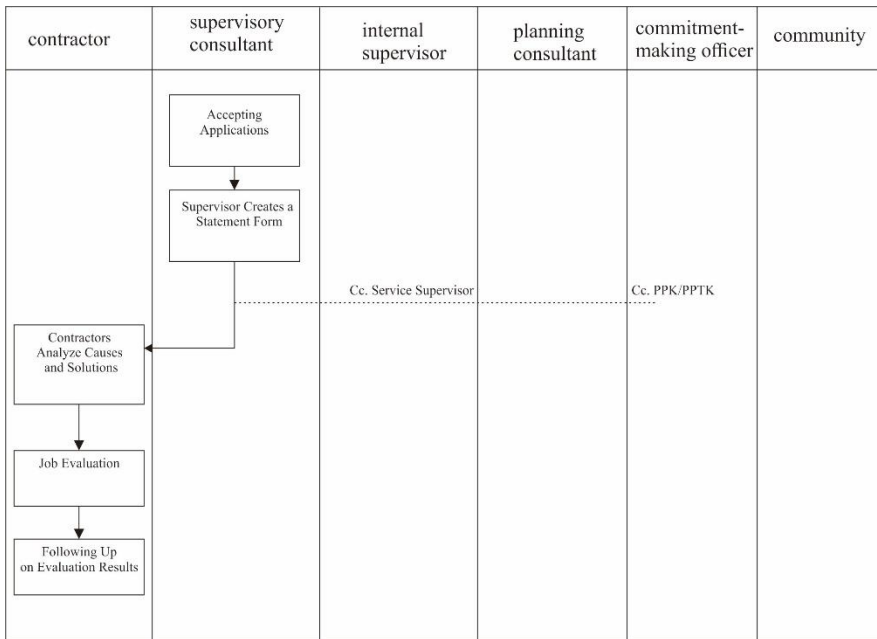


Figure 4.15. flowchart Acceptance and Payment for Work Results

Workflow : Detection → Reporting → Identification → Critical Status → Analysis → Recovery Plan → Approval → Implementation → Monitoring → Evaluation

4.4.16. Issues in the Field Were Addressed Quickly and Accurately.

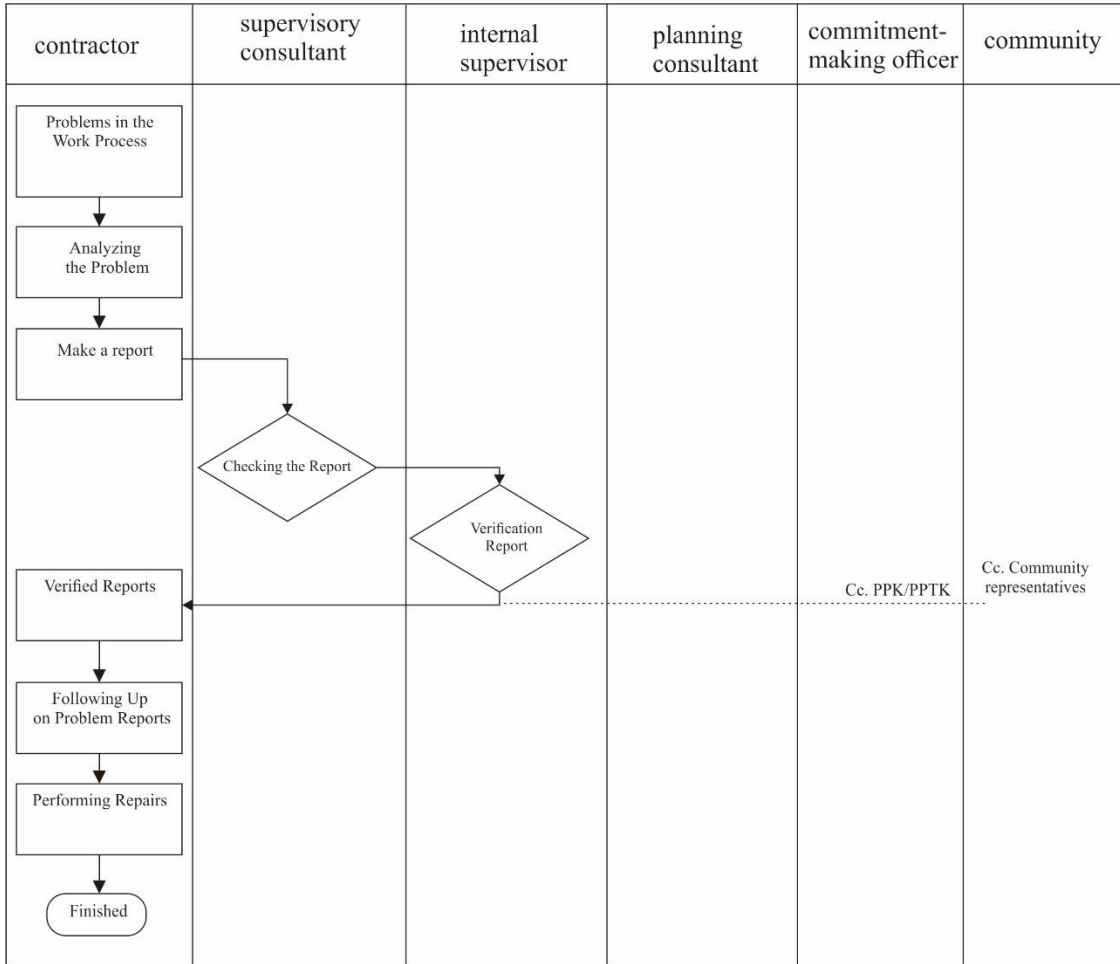


Figure 4.16. flowchart Issues in the Field

Workflow : Detection → Report → Classification → Analysis → Solution → Approval → Improvement → Monitoring → Verification

4.4.17. The Final Work Inspection was Complete.

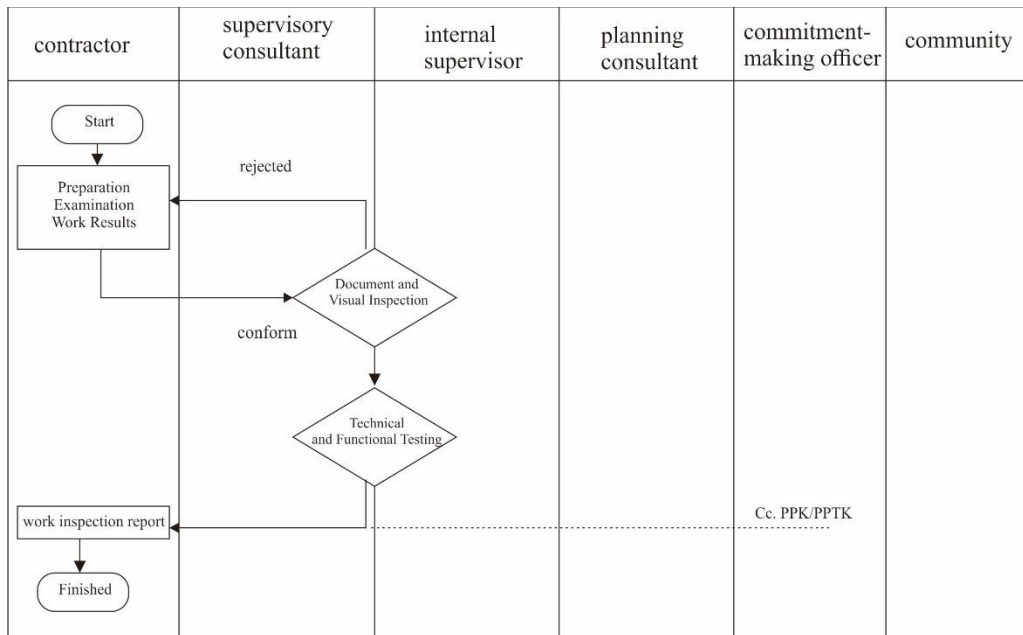


Figure 4.17. flowchart The Final Work Inspection

Wokrflow : Submission → Checklist → Inspection → Punch List→ Improvement → Verification → Approval → Documentation → Ready for PHO

4.4.18. The First Handover (PHO) was carried out according to procedures.

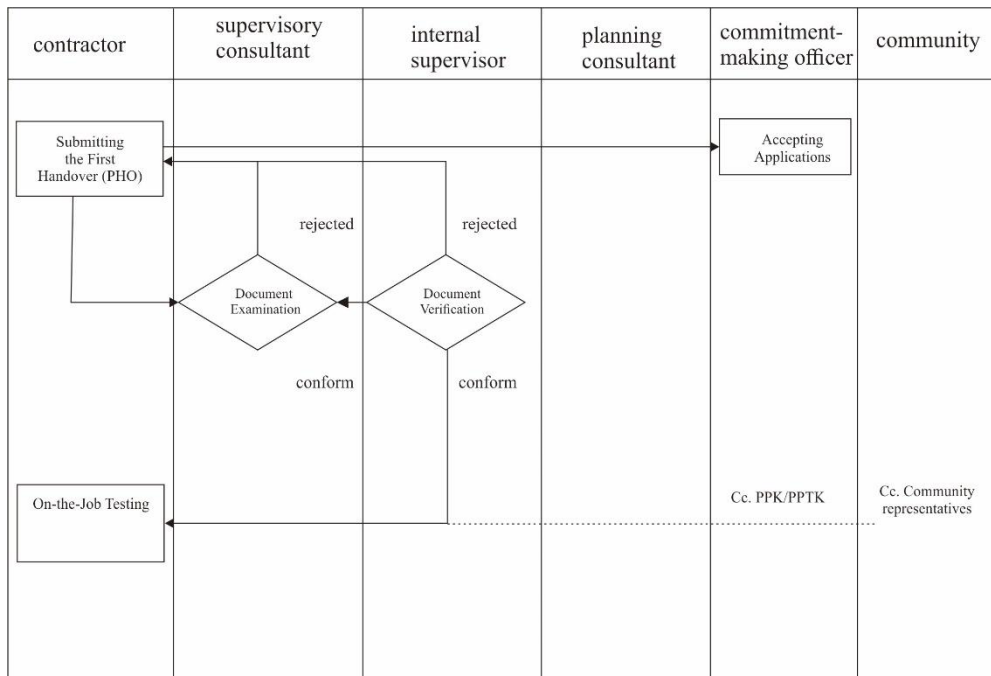


Figure 4.18. flowchart The First Handover (PHO)

Workflow : Submission → Verification → Scheduling → Joint Inspection → Approval → Signing → Document Submission

4.4.19. Final Work Testing.

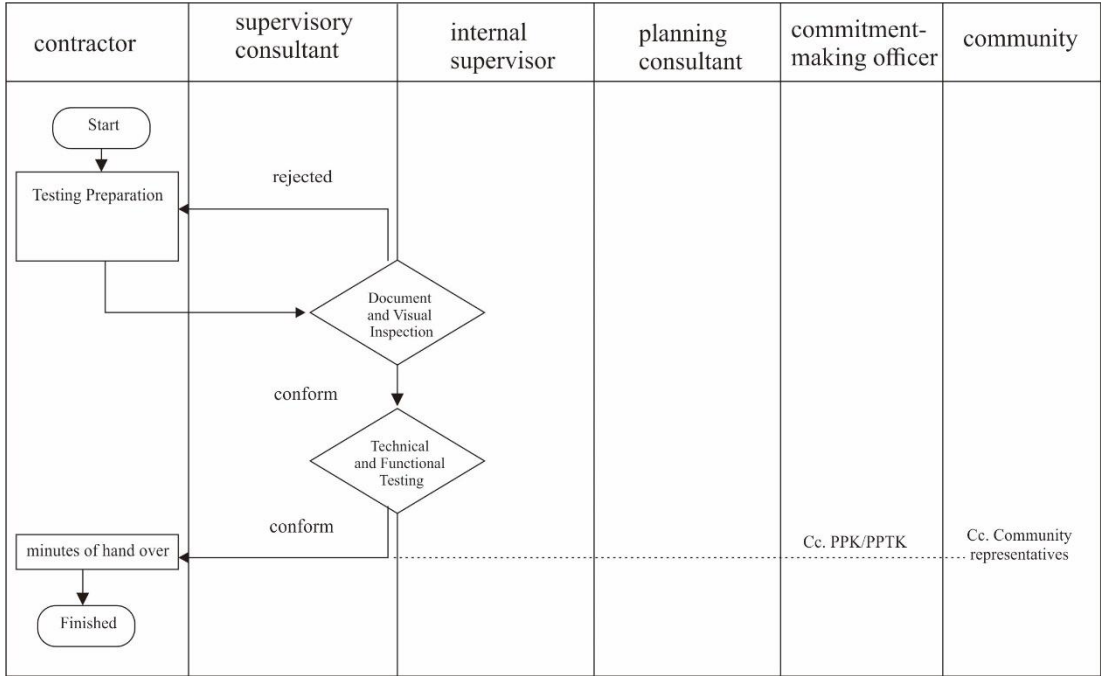


Figure 4.19. flowchart Final Work Testing

Workflow : Test Plan → Submission → Verification → Preparation → Testing → Recording → Evaluation → (Improvement / Pass) → Approval

4.4.20. Maintenance Plan.

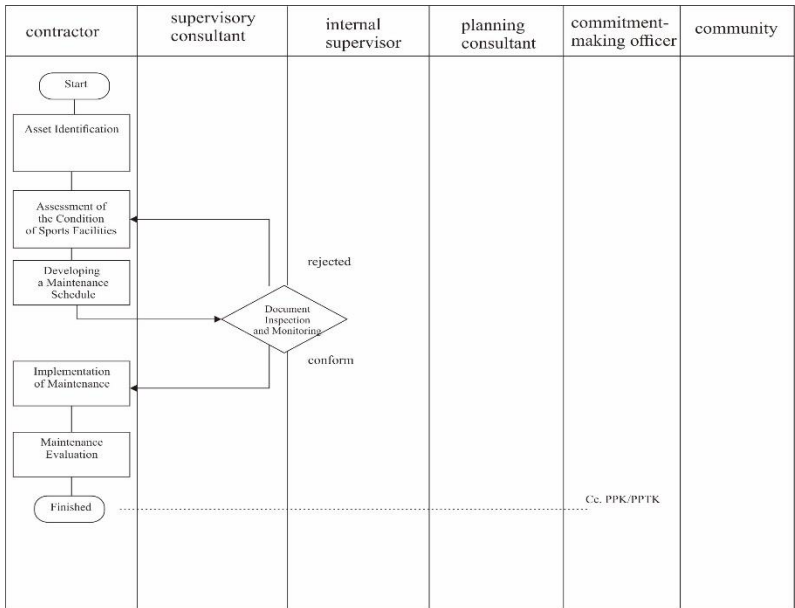


Figure 4.20. flowchart Maintenance Plan

Wokrflow : Identification → Plan → Schedule → Verification → Implementation → Recording → Evaluation → (Improvement / Normal) → Report

4.4.21. Issuance of the First Work Handover Minutes

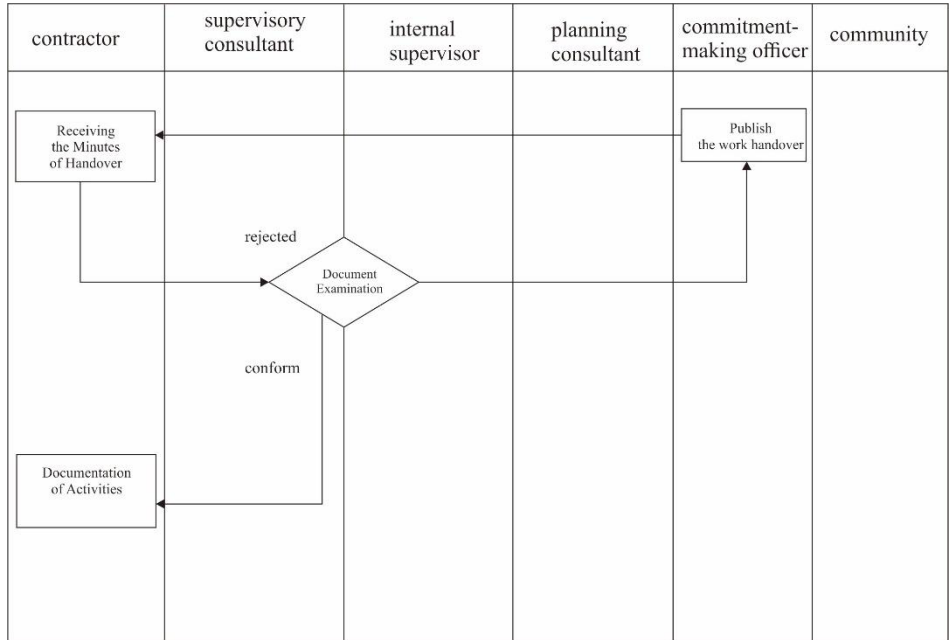


Figure 4.21. flowchart Issuance of the First Work Handover Minutes

Wokrflow : Request → Verification → Validation → Draft → Review → Approval → Signing → Distribution

4.4.22. Documentation of work results is properly stored.

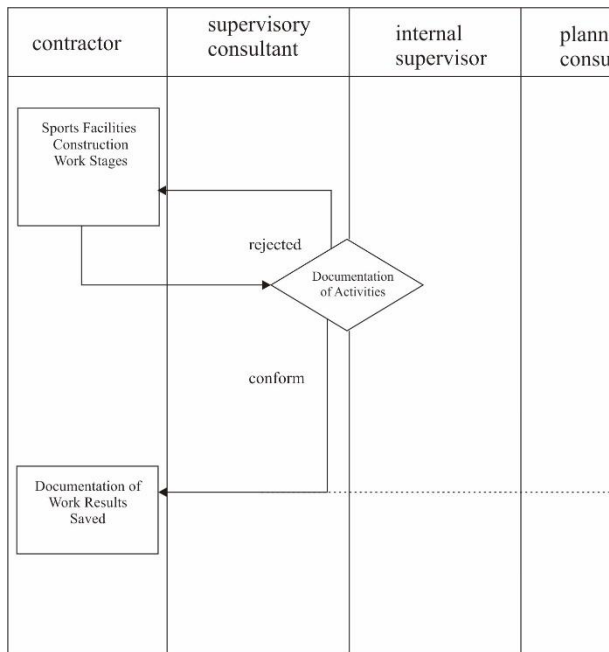


Figure 4.22. flowchart Documentation of work results

Workflow : Collection → Classification → Upload → Validation → Approval → Storage → Backup → Access → Archive

3. All experts agreed that the quality targets based on Circular Letter of the Minister of Public Works and Housing of the Republic of Indonesia Number 15/SE/M/2019 must be met at each stage of the work. Achieving these quality targets can improve the quality of community sports facility construction.

4. Development of standard operating procedures for the stages of community sports facility work by involving community participation to improve work quality performance. Standard operating procedures that have been added to community participation in supervision form the basis for the supervision workflow that will be adapted to the website-based platform.

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