

CONSTRUCTION PROCEDURES MANUAL
FOR
PUBLIC IMPROVEMENTS BY PRIVATE CONTRACTS

TABLE OF CONTENTS

INTRODUCTION

I. DEFINITIONS	1
A. General Definitions	1
B. Improvements Covered.....	2
II. RESPONSIBILITIES	3
A. Owner	3
B. Engineer.....	3
C. County.....	4
III. PROCEDURES	6
A. Project Acknowledgement	6
B. Plan Submittal.....	6
C. Plan Review	7
D. Agreement for Improvements (Permit) Requirements	7
E. Pre-Construction Conference	8
F. Progress of Construction	9
G. Project Completion and Acceptance.....	10
H. Warranty Period	11
IV. CONSTRUCTION MONITORING	12
A. Required Testing.....	12
B. Reporting of Results	13
C. Field Revisions.....	14
D. Engineer's Certification	14
V. PROJECT SECURITY	15
A. Security Requirements.....	15
B. Acceptable Forms of Security	15
C. Time Frames for Construction of Improvements.....	16
D. Pay Request Authorization.....	16
E. Retainage/Release of Project Security	16
F. Procedure for County to Utilize Security Funds	16

INTRODUCTION

This manual presents procedures which shall apply to all public improvements financed and constructed by private contracts within Benton County. This includes improvements to the County's water, sanitary, storm drain and transportation systems which occur in conjunction with private development.

The Comprehensive Plan establishes policies to guide development in the community. Those policies are implemented through the Development Code. This manual documents the procedures established by the County Engineer in fulfilling the requirements of the Development Code.

The manual is intended to supplement and be compatible with several other related documents, including the Standard Construction Specifications and the Design Criteria Manual for Public Improvements.

I. DEFINITIONS

A. General Definitions

For the purposes of this document, the following terms are defined:

Benton County, hereafter called "County", shall mean the County Engineer or designated representative.

Agreement for Improvements: An agreement between the developer and the County providing approval for the developer to be responsible for public improvements in accordance with plans, specifications and standards approved by the County Engineer.

Consulting Engineer: Hereafter called "Engineer", shall mean an individual or firm, licensed to practice engineering in Oregon, who has been retained by the Owner to perform engineering work as specified later in this manual.

Contractor: An individual or firm licensed, bonded and insured in accordance with State and local requirements to install or perform work on public municipal facilities in Oregon, who has been retained by the Owner to construct the public improvements as shown on the approved plans and specifications.

Final Acceptance: Acceptance by the County of the public improvements, subject to a one year warranty period.

Final Inspection: An inspection conducted by the County in the presence of the Engineer upon substantial completion of the improvements to determine corrections needed before final acceptance can take place.

Owner/Developer: Hereafter called "Owner", shall mean the actual owner or developer of the proposed project and associated public improvements, or a designated agent. The agent must be identified in writing by the owner, if a different person.

Permit: The public improvements by private contract permit, authorizing the Contractor to install or perform work on County facilities.

Plans: Construction plans, including plan and profile drawings for each utility main; stationing for manholes, service taps, valves and other appurtenances; roadway plan, profile and cross-sections; and standard detail drawings for the public improvements proposed to be installed.

Primary Inspections: Inspections carried out by the Engineer in accordance with County standard construction specifications and accepted engineering practice for the purpose of assuring that improvements are being constructed in conformance with the approved plans and specifications.

Performance Guarantee: An agreement between the County, the owner, and a lending institution establishing financial security in the form of an escrow account, line of credit account, surety bond or cashier's check for the full value of the public improvements which serves as the County's security that all public improvements will be initiated and completed in accordance with the approved plans in an acceptable time frame.

Public Improvement: Facility improvements intended to be owned and maintained by Benton County, including water, sanitary sewer, storm drain and transportation systems.

Service Lateral: The portion of a public utility system which provides service to an individual property. That portion of the service lateral located outside the public right-of-way is considered to be private, with maintenance being the responsibility of the property owner.

Standard Construction Specification: A document containing the specifications and standard detail drawings of Benton County which apply to all public improvements constructed.

Substantial Completion: A point in the construction process when the public improvements are fully completed with the exception of minor adjustments or clean-up work.

Warranty Fund: A dedicated fund containing five percent of the project security which is held for a period of one year following the County's final acceptance of the public improvements.

Warranty Period: The one year period, unless otherwise specified, the warranty fund must be held after the County's final acceptance of the public improvements.

B. Improvements Covered

1. New or reconstructed public sanitary sewer mains and appurtenances, including the portions of service laterals located within public right-of-way.
2. New or reconstructed public storm drain mains and appurtenances, including the portions of service laterals located within public right-of-way.
3. New or reconstructed public water mains and appurtenances, including the portions of service laterals between the main and the County meter.
4. New or reconstructed public street or roadway facilities, including bridges, drainage structures, pedestrian bicycle, and transit facilities, mail delivery facilities, and other facilities approved on the plans.
5. Open, natural drainageway improvements that are specifically identified on the plans.

II. RESPONSIBILITIES

A. Owner

The Owner shall be responsible for the following items:

1. Maintaining overall responsibility for project management, construction management, contract administration. Permit acquisition and compliance, and if required, right-of-way and easement acquisition or dedication.
2. Naming in writing an agent, if other than himself, to act on his behalf.
3. Retaining the services of an Engineer.
4. Requesting and scheduling a pre-design conference with the County for the purpose of establishing project guidelines and requirements.
5. Hiring a Contractor experienced in the construction of public improvements.
6. Retaining the services of a Professional Land Surveyor to provide construction staking.
7. Obtaining an excavation and grading permit to identify a method of disposing of material generated by the project.
8. Ensuring that construction does not begin until the permit is issued.
9. Ensuring the safety and cleanliness of the job site in accordance with requirements established by the Occupational Safety and Health Act.
10. Ensuring that any hazardous materials generated by the work or encountered on the job site are disposed of in accordance with applicable local, State, and Federal regulations.
11. Preparing pay requests relative to work completed, where a mutual improvement agreement is utilized for project security.
12. Assuring that payment is made for all work on the project.

B. Engineer

The Engineer shall be responsible for the following items:

1. Preparing and submitting to the County complete detailed construction plans. Where appropriate, special provisions, and bid documents shall also be submitted.
2. Providing a site grading plan to accompany the excavation and grading permit application.

3. Requesting and scheduling a pre-construction conference (for more information, see Section III.E).
4. Preparing legal descriptions and instruments for all required permanent and temporary right-of-way, easements, and dedications.
5. Providing primary construction inspection consistent with the County's standards and accepted engineering practice.
6. Monitoring construction and reporting required inspection activities and test results to the County.
7. Notifying, furnishing plans to, and coordinating with utilities.
8. Obtaining all necessary approvals and permits from other agencies (ODOT, Division of State Lands, Corps of Engineers, Department of Environmental Quality, etc.).
9. Preparing "as-built" drawings and providing required certifications prior to final acceptance.

C. County

The County shall be responsible for the following items:

1. Assigning to the project personnel with appropriate experience to act as project liaison between the County and the Owner/Engineer/Contractor.
2. Staffing pre-design and pre-construction conferences.
3. Reviewing submitted construction plans in accordance with the "Procedures" section of this manual.
4. Reviewing license, bonding, and insurance of Contractors.
5. Preparing and executing project security forms.
6. Calculating and collecting permit fees, and preparing and issuing the permit upon receipt and approval of all needed items.
7. Periodically monitoring the project to verify construction is progressing satisfactorily and that the Engineer is providing required inspection services.
8. Reviewing and approving fund disbursements from performance guarantee funds, if applicable.

9. Conducting a final inspection in the presence of the Owner and Engineer.
10. Coordinating with other County Departments to ensure that any money owed the County for work performed on the project by the County has been received.
11. Upon final acceptance of the public improvements, establishing in writing the term and conditions of the warranty period.
12. Conducting a warranty inspection within a one year period of final acceptance and following up on warranty repairs. County shall notify Owner and Engineer of warranty inspection dates.
13. Filing and microfilming as-builts, and revising County facility maps to reflect new construction.
14. Notifying the Owner and Engineer of any deficiencies in performance of responsibilities. If noted deficiencies are not satisfactorily resolved, the County shall provide notice to Owner and Engineer of work suspension.
15. Provide permit fees and application forms.
16. County will specify appropriate standards.

III. PROCEDURES

A. Project Acknowledgement

1. The Engineer shall submit to the County a letter verifying that he/she has been retained to provide engineering services for the project.
2. A copy of the agreement for services between the Engineer and the Owner shall be provided and shall indicate that the scope of services is consistent with the responsibilities assigned the Engineer in this document.
3. If requested by the County, the Engineer shall submit a statement of qualifications including:
 - a. Name and address of firm
 - b. Name of project engineer
 - c. Experience in design, survey and construction of public improvements
 - d. A list of references
4. The County shall acknowledge the Owner's proposal and the Engineer's assignment.
5. The Engineer shall request and attend a pre-design conference with the County before preparation of plans.

B. Plan Submittal

1. The Engineer shall prepare and submit to the County two (2) complete sets of detailed construction plans, containing, at a minimum, the following information:
 - a. Separate plan and profile drawings for each utility main.
 - b. Stationing for all manholes, service taps, valves, fittings, and other appurtenances.
 - c. Plan, profile, cross-section drawings, and curb return data for roadway designs.
 - d. Reference to and inclusion of appropriate Standard Details.
 - e. A prominent statement that all materials and workmanship must conform to applicable Standard Construction Specifications.

- f. Calculations and support data used for all engineering designs, in accordance with the requirements of the County's Development Code.
 - g. A grading plan indicating areas of cut and/or fill on the project site. The grading plan shall include a finding of no impact to regulated wetlands or secure the required permits.
 - h. A cover sheet with an overall site plan showing lot lines, right-of way lines, public utility lines (existing and new), drainageways, and other pertinent features.
2. The plans shall be drawn at a scale no smaller than 1 inch = 40 feet, with the exception of the overall site facility plan (cover sheet), which may be drawn at a scale of up to 1 inch = 100 feet.
 3. The plans shall be submitted on 22 inch by 34 inch sheets.
 4. The plans must include the signed stamp of the Engineer.

C. Plan Review

1. Upon receipt of two complete sets of construction plans, the County shall review, and within 20 days approve the plans or provide a letter of revisions with a marked-up copy of the plans.
2. When corrected plans are returned to the County, the County shall review, and within 10 days, approve the plans or provide a letter of revisions with a marked-up copy of the plans.
3. Plans approved for construction shall be signed by the County.

D. Agreement for Improvement Requirements

The following items must be received by the County prior to issuance of the Agreement for Improvements:

1. Approved construction plans, specifications and estimates.
2. A certificate of insurance, in the Contractor's name, in the following amounts:

\$50,000 for damage to property; \$100,000 for injury to a person, plus special damages up to an additional \$100,000; and \$500,000 for any number of claims arising from a single accident or occurrence. If the insurance policy contains an annual aggregate limit, the aggregate shall not be less than \$1,000,000. The policy shall name Benton County, its officers, agents, and employees as an additional insured.

3. A certificate of insurance for worker's compensation, in the Contractor's name, as required by the Oregon Revised Statutes.
4. A copy of the Contractor's bid tabulation for use in calculating the agreement for improvement fees.
5. A copy of the contract between the Owner and Contractor.
6. An indemnity agreement signed by the Contractor.
7. Project security, in accordance with the requirements of Section V, in the form of one of the following:
 - a. An escrow account
 - b. A line of credit amount
 - c. A surety bond
 - d. A cashier's check made out to the County
8. Payment of fees for the following items:
 - a. Plan review
 - b. Construction monitoring
9. Copies of any other required permits or documentation

E. Pre-Construction Conference

1. A pre-construction conference, conducted by the Engineer, shall be held prior to the start of construction.
2. The Engineer shall inform the Owner, Contractor, County, and representatives from all pertinent utilities (power, TV cable, natural gas, telephone) about the time and location of the meeting, and request their attendance.
3. Items to be discussed include, but are not limited to:
 - a. Roles and responsibilities of the Owner, Engineer, Contractor, County, and utility representatives
 - b. Project work scheduling
 - c. Scheduling of trenching by the Contractor for utility installation
 - d. Traffic and dust control, noise abatement
 - e. Location and installation of mail delivery facilities

- f. Required easements and dedications
- g. Utility installations on the project
- h. Safety during construction - expectations and responsibilities
- i. Erosion control and site weatherization over rainy season
- j. Materials testing and reporting
- k. Approvals/permits from other agencies (ODOT, Division of State Lands, railroads, etc.)
- m. Appropriate public notification that may be required for work impacting adjacent properties or rights-of-way.

F. Progress of Construction

1. Construction may proceed only after the Agreement for Improvements has been issued.
2. The Agreement for Improvements will be valid during the time period specified. If additional time is needed to complete the improvements, a new permit will be issued in accordance with the provisions of Section V.C.
3. The Owner or Agent shall administer and supervise the construction.
4. The Engineer shall be responsible for conducting inspections to verify construction meets the County's specifications and the approved project plans.
 - a. The Engineer shall certify that all materials and workmanship meet or exceed the approved plans and specifications.
 - b. The Engineer shall be available to respond to questions or to assist the County in making periodic site visits.
 - c. The Engineer shall submit daily inspection reports to the Owner, with copies provided to the County. These reports shall contain a statement that work is proceeding in compliance with the approved plans and specifications, and shall be signed by the Engineer.
5. All changes to the approved plans shall be submitted for approval by the County prior to making the revision.
6. All field revisions shall be noted on a set of working plans as the changes occur.

7. The County will perform periodic site visits at critical points in the construction to generally verify that the work meets the approved plans and specifications. Subject work shall not proceed until any deficiencies have been corrected.
8. The County shall notify the Owner and Engineer of any construction observed to be not in conformance with the approved plans and specifications. Subject work shall not proceed until any deficiencies have been corrected.
9. For periodic payments throughout the project where a Performance Guarantee has been utilized, the Owner shall submit to the County written payment requests along with itemized cost figures substantiating the request.

G. Project Completion and Acceptance

1. When, in the Engineer's judgement, the work is substantially complete, the Engineer shall notify the County of this in writing. The notification shall include a statement that the completed work complies with the approved plans and specifications.
2. Upon written notice of substantial completion, the County will conduct a final inspection of the project in the company of the Engineer and the Owner. The County shall within 15 days, provide a written correction notice identifying repairs needed prior to acceptance of the public improvements.
3. Once all corrections have been made, the Engineer shall submit the following items prior to acceptance by the County:
 - a. As-built plans
 - b. A certification of work completion (signed and stamped by the Engineer)
 - c. A signed and notarized copy of a Release of Liens and Claims Affidavit between the Owner and the Contractor
 - d. Signed originals of all necessary easements and dedications
 - e. A request for acceptance of the public improvements
4. Upon receipt of all necessary paperwork, the County shall issue in writing an acceptance of the public improvements, and authorize the release of up to 95 percent of the project security.

H. Warranty Period

1. In conjunction with certifying the acceptance of the public improvements, the County shall establish a warranty period for the improvements.
2. The warranty period shall be effective for one year, unless otherwise specified.
3. Prior to expiration of the warranty period, the County shall conduct a warranty inspection.
4. All necessary repairs and corrections will be transmitted in writing to the Owner, who shall have the repairs made immediately.
5. Following satisfactory repair, the County shall authorize in writing, release of the warranty fund.

IV. CONSTRUCTION MONITORING

A. Required Testing

The Engineer shall be responsible for conducting and reporting the results of the following test, at intervals specified by the Standard Construction Specifications:

1. Streets
 - a. Subgrade (every 50 feet)
 1. Grade check (tolerance of +/-0.05)
 2. Compaction (minimum of 3 tests, or 500 foot intervals)
 - b. Base
 1. Grade check
 2. Compaction
 - c. Asphalt Pavement
 1. Grade check
 2. Compaction
 3. Mix composition and proportion
 - d. Portland Cement Concrete Pavement
 1. Grade check
 2. 28 day compressive strength (cylinders)
 3. Air entrainment
 4. Slump
 - e. Curbs
 1. Grade check
 2. 28 day compressive strength (cylinders)
2. Sanitary Sewer
 - a. Air test of lines, including service lines
 - b. Manhole leakage testing
 - c. Deviation from alignment and grade
 - d. Trench backfill
 1. Material quality
 2. Trench compaction

- e. Television inspection of all public lines (County will perform inspection at Owner's cost)
- 3. Storm Drain
 - a. Deviation from alignment and grade
 - b. Trench backfill
 - 1. Material quality
 - 2. Trench compaction
 - c. Television inspection of all public lines (County will perform inspection at Owner's cost)
- 4. Waterlines
 - a. Pressure and leakage testing
 - b. Bacteriological testing
 - c. Trench backfill
 - 1. Material quality
 - 2. Trench compaction
- 5. Sidewalks and Driveways
 - a. Form inspections (location, base, compaction)
 - b. 28 day compressive strength (cylinders)

B. Reporting of Results

- 1. Test results shall be reported on standard forms provided by the County.
- 2. The Engineer may use his/her own forms for test results, if approved by the County.
- 3. The date, time, Engineer's name, and results of tests shall be reported and signed by the Engineer for each test required. The report shall include a certification by the Engineer that all tests were performed in accordance with the Standard Construction Specifications and accepted engineering practice.

C. Field Revisions

1. The Owner/Engineer is permitted to make minor revisions to the approved plans in the field. The Owner/Engineer shall notify the County immediately about any field revisions.
2. Any major change to the approved plans shall be approved by the County prior to the work.
3. All changes shall be recorded on a change order form which shall be dated and signed by the Owner/Engineer.
4. The Engineer shall note all changes on a set of working plans.

D. Engineer's Certification

1. Following completion of the public improvements and prior to acceptance of those improvements, the Engineer shall provide a certification of work completion, certifying that the improvements were constructed in accordance with the Standard Construction Specifications and the approved plans.

V. PROJECT SECURITY

A. Security Requirements

1. All projects constructed within an existing right-of-way shall have financial security for the full value of the public improvements.
2. The project security shall serve as the County's insurance that all public improvements within existing right-of-way will be initiated and completed in accordance with the approved plans, in an acceptable time frame. If the Owner demonstrates sufficient cause to terminate the project prior to completion of the public improvements, and the County determines that to do so would not compromise the public interest, the project may be terminated and project security released to the Owner.
3. The amount of project security required shall be sufficient to cover the County's cost to complete the construction of the public improvements in the event that the Owner fails to do so.
 - a. The Owner shall submit a signed bid tabulation from the Contractor in order to establish a construction cost for the project.
 - b. The construction cost shall be multiplied by 120 percent to determine a total project cost, including engineering, administration, and contingencies.
 - c. The amount of project security required shall equal the total project cost, as established above.
4. A portion of the project security, normally five (5) percent of the construction cost, shall be reserved in a dedicated warranty fund, to be held for a period of one year following the County's final acceptance of the public improvements.

B. Acceptable Forms of Security

The following are considered acceptable forms of project security:

1. Certification by a lending institution that funding for the improvements are either:
 - a. Held in an escrow account
 - b. A line of credit may be established as security
2. A surety bond executed by a surety company authorized to transact business in the State of Oregon, in a form approved by the County attorney.
3. A cashier's check issued to the County.

C. Time Frames for Construction of Improvements

1. The improvements must be constructed and accepted by the County within the time frame stipulated with issuance of the permit.
2. The time frames may be extended with a written request by the Owner and written approval of the County and the lending institution, if applicable.

D. Pay Request Authorization

1. When security monies are held in an account, those funds may be disbursed only with the joint approval of the County, the Owner and the financial institution.
2. For periodic payments throughout the project, the Owner shall submit written payment requests to the County along with itemized cost figures substantiating the request.

E. Retainage/Release of Project Security

1. Where Performance Guarantee Agreements are utilized, a minimum of five percent of the total account, exclusive of the warranty fund, shall be retained in the account and disbursed only upon final acceptance of the public improvements.
2. For all projects, five percent of the total project security shall be held in a warranty fund for a period of one year following the County's acceptance of the public improvements. Following satisfactory inspection of the improvements at the end of the warranty period, the County shall authorize in writing the release of the warranty fund.

F. Procedure for County to Utilize Security Funds

If the developer fails to comply with the terms of the permit or the project security agreement, the county may take the following actions, depending on the type of project security utilized.

1. Performance Guarantee Agreement (escrow or line of credit account)
 - a. Notify the Owner and the financial institution in writing that the Owner has breached the agreement.
 - b. Request in writing that the financial institution release all funds held in the project security account to the County.
 - c. If the amount remaining in the account is insufficient to cover the costs for completing the improvements for which the account was established, the County will request in writing from the Owner the additional funds required.

- d. If the additional funds are not forwarded to the County within 30 calendar days of the written request for such funds, the County may file an action at law against the Owner for the collection of the additional amounts plus all attorney fees and legal costs.
2. Surety Bond
- a. Notify the Owner and the surety company in writing that the project security agreement has been breached.
 - b. File a claim against the bond and negotiate with the surety company to complete the improvements.
3. Cashier's Check
- a. Notify the Owner in writing that the project security agreement has been breached.
 - b. Utilize the money from the cashier's check to complete the improvements.
 - c. If the amount of the check is not sufficient to cover the cost for completing the improvements for which the check was issued, the County will request in writing from the Owner the additional funds required.
 - d. If the additional funds are not forwarded to the County within 30 calendar days of the written request for such funds, the County may file an action at law against the Owner for the collection of the additional amounts plus all attorney fees and legal costs.