

SECTION 2

GENERAL REQUIREMENTS

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SECTION 2 GENERAL REQUIREMENTS

2-1 ENGINEER REQUIRED

A Design Engineer shall prepare all plans and specifications for engineering works requiring County approval or permits. All design work shall be performed in accordance with these Improvement Standards and in accordance with the standard of practice for the particular branch of engineering.

Pursuant to the California Business and Professions Code, Sections 6746 and 6747, improvement plans for work performed by communications companies or public utilities under the jurisdiction of the California Public Utilities Commission are not required to be prepared by a Design Engineer.

2-2 PLANS REQUIRED

Complete plans for all proposed streets, highways, bikeways, alleys, site access, grading, earthwork, erosion control, storm drainage facilities, sewer collection, treatment and disposal facilities, water supply and distribution systems, street lighting, traffic control devices, underground utilities, landscaping, and any other improvement required by the project approvals, including any necessary design calculations, reports, dedications, and easements, shall be prepared by the Developer and submitted to the Department for approval. Exceptions may be made for minor work such as replacing infrastructure, connections to existing utilities, and related utility work, as determined by the County Engineer.

2-3 REFERENCE TO COUNTY IMPROVEMENT STANDARDS

The General Notes of all plans shall include the following note:

“Unless shown or specified otherwise, all construction and materials shall comply with the latest edition of the Yolo County Improvement Standards.”

The Design Engineer shall be responsible for providing specific references on the plans to other standard specifications for construction features that are not included in these Improvement Standards.

2-4 WORK IN COUNTY RIGHTS OF WAY, EASEMENTS AND WATERWAYS

The following are required prior to working within County rights-of-ways and easements:

- A. Possession of a complete set of Department approved improvement plans shall be required prior to performing work in Yolo County rights of way and easements.
- B. A valid encroachment permit issued by the Department shall be required prior to performing work in Yolo County rights of way as provided for in the California Streets and Highways Code, Section 1460 et. Seq., unless such work is performed under a Subdivision Agreement with the County as defined in Section 8-1.342 of the Yolo County Code.
- C. The work shall be secured with a bond or other security, as required by Sections 8-1.1004 and 8-1.1501(a) of the Yolo County Code.

2-5 INITIAL PLAN SUBMITTAL REQUIREMENTS

The initial submittal of improvement plans shall be made to the Department. The initial submittal shall consist of the following, but is not be limited to:

- A.** Payment of deposit toward the actual cost of plan review as required by the Master Fee Resolution, and submittal of the necessary application to establish a reimbursable work order.
- B.** The names, addresses and telephone numbers of the Developer and the Design Engineer.
- C.** One copy of the final “Conditions of Approval”, including the Tentative Map and accompanying items as listed in the [Yolo County Code](#) and the ‘Master Checklist for Final Map, Parcel Map, and Improvement Plan Submittals.’
- D.** One copy of the mitigation measures for the Development, including related maps and plans, and any other discretionary planning actions for the subject site and development.
- E.** Three sets of plans and project specifications, complete and in accordance with these Improvement Standards.
- F.** Supporting design studies, reports, calculations, plans, computations, and test data.
 - a. Hydrology and Hydraulics calculations and reports for Storm Runoff, including watershed map.
 - b. Sewer System Calculations and shed map.
 - c. Water System Network Analysis and maps.
 - d. Geotechnical Report describing subsurface condition, soil bearing capacity, groundwater levels, soil drainage characteristics, soil erodability characteristics, and containing recommendations for earth grading and compaction, road structural design based on R-value tests, boring logs, soil corrosivity, ground water, etc., as required to meet project needs and conditions. Additional information may be required by the Chief Building Official.
 - e. Street Lighting System Design.
 - f. Other material requested by the County Engineer.
- G.** Cost estimates for all onsite and offsite improvements for the purpose of determining the amount of the Improvement Security. Cost estimates shall be based on the costs of construction as would be incurred by the County in the public bidding process, and shall include a minimum 15% construction cost contingency, and a minimum 20% allowance for project administration costs. (Final cost estimates sealed by Design Engineer shall be reviewed by the County Engineer prior to the approval of a Parcel or Final Map.)
- H.** Parcel or Final Map submittal and accompanying items to be reviewed concurrently by the County Surveyor.
- I.** Copy of utility letters in accordance with Section 2-18.
 - a. Joint Trench Plans must be submitted prior to approval of Improvement Plans and/or recordation of a related Map.
- J.** Copies of permits as required by other agencies.

- K.** Digital files as requested during plan review process. Digital files for all plans, maps, and other supporting documents required prior to final approval.
- L.** Copies of rights-of-entry from adjacent properties required for access or construction activities.

Additional copies of any submitted items shall be provided as requested by the Department.

Should there be required alterations or revisions to the plans as submitted, the County Engineer will return one copy with the corrections marked or indicated thereon. If the plans submitted are not prepared in accordance with these Improvement Standards or are not in keeping with the standards of the profession, the County Engineer may return them unmarked and unapproved.

2-6 IMPROVEMENT PLANS RESUBMITTAL

The County Engineer shall indicate the number of plan sets to be resubmitted. The Design Engineer shall notify the County Engineer in writing if plans being resubmitted contain revisions or alterations other than those required by the County Engineer on prior plan reviews. Revision notations shall not be shown on plans for revisions made prior to the County Engineer's approval of the plans.

2-7 PLAN CHECK AND INSPECTION FEE

The required plan check fees and inspection fees shall be determined in accordance with the Yolo County Master Fee Resolution.

Should the development not be carried to completion, any portion of the required deposit over and above the accumulated costs expended by the Department on the development will be refunded to the Developer. Failure of a Developer to complete a project does not relieve the Developer from being responsible for all costs incurred by the County.

The Developer is responsible for notifying the Department of any change of billing address, ownership or design consultants.

2-8 PLANS APPROVAL

Plans shall not be considered approved, nor shall construction be authorized, until the County Engineer signifies plan approval by signing every sheet of the set of plans. The County Engineer will sign the plans after the Design Engineer has made all the necessary revisions, signed and stamped the original plans, fees have been paid and any other related project requirements, such as, but not limited to, conditions of approval, have been fulfilled.

For a Final Map or Parcel Map that requires Improvement Plans approval, the approval process will generally consist of the following:

- A.** Final Map, Improvement Plans and supporting documentation are submitted to the Department for review.
- B.** Comments are returned to the Developer or Design Engineer.
- C.** Corrected documents are re-submitted to the Department. This step and the previous one are repeated until the Map, Plans, and supporting documentation meet County requirements.
- D.** The Department prepares the Subdivision Agreement for review by the Developer. Developer returns comments and Department revises as appropriate, in consultation with County Counsel.

- E. Developer submits final corrected Improvement Plans and Final Map to Department for County Engineer's approval and County Surveyor's approval, respectively. Developer submits executed Subdivision Agreement, including improvement security and material payment security, insurance certificates, fees, deeds, etc.
- F. Providing all Conditions of Approval for the Final Map have been satisfied by the Developer, the Department prepares agenda item for a subsequent Board of Supervisors meeting, to present the Improvement Plans, Final Map, and Subdivision Agreement to the Board of Supervisors.
- G. If the Board of Supervisors approves the agenda item, a copy of the approved Plans are released to Developer (signed originals remain with the County), the Map is signed by the County Surveyor and Director, forwarded to the Recorder, and the Agreement is executed. A grading permit may be issued following Board of Supervisors' approval.
- H. Developer schedules pre-construction meeting with Department staff, other Agency staff, utility staff, Developer's Contractor, material testing lab, consultants and other appropriate personnel representing the Developer during construction.
- I. Construction on the site may begin following the pre-construction meeting.
- J. Developer and County hold periodic meetings to discuss and resolve any issues arising during construction.

The County Engineer's plan approval is valid for a period of twelve months. Should Board of Supervisors' approval not be obtained within a 12-month period, or, in the case of work not requiring Board of Supervisors' approval, the work does not commence within a 12-month period, the plans shall be resubmitted for re-approval.

2-9 APPROVED PLANS REQUIRED

The Developer shall provide the Contractor with properly approved plans. The County Engineer shall have the authority to order any Contractor to cease work on any project if said Contractor does not have properly approved plans in their possession.

The cost of additional copies or reduced copies of approved plans that may be required by the County shall be provided at the Developer's cost.

2-10 SUBDIVISION IMPROVEMENT AGREEMENT REQUIRED

Concurrently with the Board of Supervisors' acceptance of the final map, the Developer shall enter into an agreement with the County agreeing to complete the public improvements within the time specified in the agreement. Such agreement shall provide a clause guaranteeing the workmanship and materials provided in all improvements for a twelve (12) months period after acceptance of the improvements by the Board of Supervisors.

To assure that the improvements required by the County Code, these Improvement Standards, and the approved improvement plans are satisfactorily completed, the subdivision improvement agreement shall be accompanied by improvement securities furnished by the Developer for the cost of the improvements. Such securities shall include a Performance Bond in the amount of one hundred percent (100%) of the engineer's estimate as approved by the County Engineer, and a Labor and Materials Payment Bond in the amount of one hundred percent (100%) of the engineer's estimate. Prior to acceptance of the improvements by the Board of Supervisors, the Developer shall furnish a warranty bond not less than fifteen (15%) percent of the engineer's estimated cost of the public improvements.

2-11 IMPROVEMENT PLANS REVISIONS DURING CONSTRUCTION

Should changes become necessary during construction, the Developer shall first obtain the consent of the County Engineer and shall then resubmit the title sheet and the plan sheets affected for approval. The changes on the plans shall be made in the following manner:

- A. The original design shall not be eradicated from the plans but shall be lined out.
- B. In the event that eradicating the original design is necessary to maintain clarity of the plans, approval must first be obtained from the County Engineer.
- C. The changes shall be clearly shown on the plans with the changes and approval noted on the revision signature block, conforming to Standard Drawing 3-1.
- D. The changes shall be identified by the revision number in a triangle delineated on the plans adjacent to the change and on the revision signature block.

Minor changes that do not affect the basic design may be made upon the written authorization of the County Engineer, but said changes must be shown on record plans when the contract is completed.

The County Engineer may specify changes to the plans required to complete the necessary facilities, to be completed by the Developer. Changes to the plans ordered by the County Engineer shall conform to all of the above.

2-12 RECORD PLANS

The Developer shall be responsible for keeping accurate records of all deviations from the plans. These records shall be utilized along with the Inspector's records to prepare a complete and accurate set of Record Plans ("As-Built").

Field measurement and certification by the Design Engineer of all final grades shown on the improvement plans, including the finished pad elevations of subdivision lots, inverts, rims, grates, top of curb at changes in vertical alignment, toe and top of slope on all finished storm drain detention basins, and any other designed and constructed parameters as required by the County Engineer, shall be required prior to final acceptance of the subdivision improvements. Building pad elevations shall be constructed to within 0.2 foot of their elevation indicated on the approved plans, and all other improvements shall be constructed to within 0.1 foot of their elevation indicated on the approved plans. Certification shall comply with Section 10-8. Constructed slopes of flowlines for pipes, channels and gutters shall not be less than 95% of the slope specified on the approved plans.

Before final acceptance of the completed improvements, the Developer shall submit one bond, 24"x36", copy of the Record Plans to the County Engineer. Following review of the copy of the Record Plans by the County Engineer, final Record Plans shall be submitted to the Department on 24" x 36" polyester film sheets (Mylar®, or equivalent) with matte finish.

2-13 CONFLICTS, ERRORS AND OMISSIONS

Excepted from the County Engineer's Improvement Plan approval are any features of the plans that are contrary to, in conflict with, or do not conform to, any California State Law, [County Code](#) or Resolution, conditions of approval, or generally accepted good engineering practice, in keeping with the standards of

the engineering profession, even though such errors, omissions or conflicts may have been overlooked in the Department's review of the plans.

2-14 CHANGE IN DESIGN ENGINEER

If the Developer elects to have a registered civil engineer or licensed land surveyor, other than the Design Engineer who prepared the plans, provide the construction staking, he shall provide the County Engineer in writing the name of the individual or firm one week prior to the staking of the project for construction. The Developer shall in all cases be responsible for:

- Verifying all construction,
- Preparation of revised plans for construction changes,
- Preparation of "as built" record plans upon completion of the construction.

In the Developer's notification of a change in the firm providing construction staking, he shall acknowledge that he accepts responsibility for design changes and "as built" information as noted above.

2-15 SPECIAL DISTRICT APPROVALS AND SUBMITTALS

The Department shall also review, although not approve, Special District facilities and improvements shown on related submittals to the County. All Special District improvements shall comply with these Standards, unless the District has adopted their own standards. A Special District shall approve plans for their respective portions of the improvements prior to County approval of the plan set.

The Fire District shall approve plans showing the domestic water system improvements prior to County approval of the plan set.

The Developer is responsible for coordinating submittals to Special Districts as required to obtain the necessary approvals, prior to County approval.

2-16 SPECIAL DISTRICT ANNEXATION

Any development within the sphere of influence of, or intended to be served by, a Special District shall be annexed to that District prior to the approval of Improvement Plans for any facilities to be maintained and operated by the District. Contact the Yolo County Local Agency Formation Commission for annexation procedures. The Developer shall provide evidence of annexation to the Department.

2-17 BORING AND JACKING SAFETY REQUIREMENTS

Any boring or jacking operation involving an opening greater than 30 inches in diameter is subject to the State of California Division of Industrial Safety's tunnel safety requirements. The Design Engineer shall submit to the State Division of Industrial Safety plans and specifications applicable to the tunnel operation, with a letter requesting tunnel classification, prior to bidding the project. The letter should identify the Department responsible for the project, and the Department's mailing address. The plans shall identify underground utilities and tanks or areas for storing fuel and toxic gases in the vicinity of the tunnel site, and a description of the historical land use in the area. The request for classification should be submitted allowing ample time for the Division of Industrial Safety review in order that any special requirements can be included in the project plans and specifications.

2-18 EXISTING UTILITIES

All existing utilities are to be shown on the plans. The Design Engineer shall submit prints of the preliminary and approved plans to the utility companies involved. Copies of the transmittal letters to the utility companies shall be provided to the County Engineer. The Developer shall make necessary arrangements with the serving utilities to properly plan for any relocation and undergrounding of existing utilities, and for the required expansion to serve the development.

All existing overhead utilities adjacent to, or in, a Development shall be placed underground. All utility services within a Development shall be placed underground.

2-19 PARTIAL PLANS

Where the improvement plans submitted cover only a portion of ultimate development, the plans submitted shall be accompanied by the approved plans of the ultimate development. The approved plans shall show topographic features of the ultimate development at an adequate scale to clearly show the proposed improvements.

2-20 INSPECTION REQUIREMENTS

Any public improvements which will be maintained by the County, or which are constructed within a County right of way or easement, shall be inspected during construction by the County Engineer, or designee. Each phase of construction shall be inspected and approved by the County Engineer prior to proceeding to subsequent phases.

The Developer shall be responsible for the cost of the services of a materials testing laboratory as defined in Section 1-10M. Inspection shall include a materials and field testing program to document compliance with the approved Plans. The scope and frequency of testing shall be determined by the County Engineer, but at a minimum shall comply with Table 1.

Table 1 - CONSTRUCTION QUALITY ASSURANCE TESTING		
ITEM	TYPE OF TEST	FREQUENCY
Trench backfill	ASTM D1557–Moisture/density curve	One per soil type encountered.
	ASTM D1557 – Relative Compaction	Field tests: Each lift: every 200 square feet, at each lateral, and 3 per intersection.
Subgrades	ASTM D1557–Moisture/density curve	One per soil type encountered.
	ASTM D1557 – Compaction	Field tests: Each lift: every 2400 sq. feet.
	Proof roll	Prior to paving with fully loaded, 3 axle, water truck, 4000 gallon minimum
Aggregate Bases	ASTM C136-Sieve Tests	One per source material
	ASTM D1557-Moisture/density curve	One per source material

	ASTM D1557- Relative Compaction Proof roll	Field tests: Each lift: every 2400 sq. feet. Prior to paving with fully loaded, 3 axle, water truck, 4000 gallon minimum
Asphalt Concrete	CTM 375 – In-Place Density ASTM D1557 Temperature Lift thickness Cross slope Smoothness	One per 4 hours of production As required for verification Continuous observation Cores as directed Water test, no birdbaths Profilograph, straightedge per Caltrans Standard Specifications 39-6.06
Concrete	Compressive Strength-ASTM C39/31 Slump-ASTM C143 Temperature/Time- ASTM C1064 Flowline grades Smoothness and finish	One set of cylinders per 25 cubic yards As required to verify compliance Continuous Water test, no birdbaths Straightedge per Caltrans Standard Specifications 73-1.06
Water Lines	Leakage - Pressure Test	All lines, refer to Section 8
Sewer manholes	Leakage - Pressure Test	All lines following aggregate base (AB) placement, prior to paving, refer to Section 7
Sewer lines	Leakage - Pressure Test Cleanliness/sags - TV camera	All lines following AB placement, prior to paving, refer to Section 7 Following AB placement, prior to paving
Sewer Laterals (Services)	Leakage - Pressure Test Cleanliness/sags - TV camera	All lines following AB placement, prior to paving, refer to Section 7 Once following AB placement, prior to paving, and once prior to final occupancy of homes
ASTM: American Society for Testing and Materials Test Method CTM: Caltrans Test Method		

Additional testing may be required at the discretion of the County Engineer to verify that construction is in compliance with the approved plans and specifications, and these Improvement Standards. Any

improvement constructed without County inspection as provided above or constructed contrary to the order or instruction of the County Engineer will be deemed as not complying with these Improvement Standards, and may be rejected by the County Engineer.

The Design Engineer shall notify the County Engineer when the Contractor first calls for grades and staking and shall provide the County Engineer with a copy of all cut sheets.

Any inspection services performed beyond normal working hours, or on weekends or holidays, either at the request of the Contractor/Developer or at the discretion of the County, shall constitute overtime inspection work. If the Contractor/Developer requests overtime inspection, such requests shall be made at least 48 hours in advance. Granting of the request to provide overtime inspection shall be at the sole discretion of the County Engineer, and is subject to the availability of inspection personnel. The inability of the County to provide overtime inspection services will require the Contractor/Developer to schedule the work during normal working hours.

The County's inspection of the work and materials shall not relieve the Developer, or the Developer's Contractor, of their obligation to construct the work in accordance with the approved plans and/or specifications, and industry standards. Work and materials not meeting the requirements of the approved plans and/or specifications may not be accepted by the County, notwithstanding that such work or materials may have been inspected by the County.

2-21 ACCEPTANCE OF IMPROVEMENTS

No improvements shall be accepted by the County until all improvements required under the improvement agreement and improvement plans have been completed, including punchlists, removal of all dirt, debris, and erosion control measures, to the satisfaction of the County Engineer. The Developer shall file a Notice of Completion, and provide a copy of the filed Notice to the County, prior to acceptance of the improvements by the Board of Supervisors.

Within ten days after receiving a written request for final inspection, the County Engineer shall inspect the work. The Developer, or designee, will be notified in writing as to any particular defects or deficiencies to be remedied. The Contractor shall proceed to correct any such defects or deficiencies at the earliest possible date. After the defects and deficiencies have been completed, a second written request for inspection shall be made to the County Engineer. The County Engineer shall inspect the work to determine if the defects have been repaired, altered, and completed in accordance with the Plans.

For work performed under a Subdivision Agreement, following the County Engineer's approval of the work an agenda item will be prepared for the Board of Supervisors' acceptance of the improvements. A warranty bond in the minimum amount of 15% of the performance bond, in accordance with Yolo County Code Section 8-1.1004, shall be filed with the County Engineer prior to requesting Board of Supervisor's acceptance.