Development No.: _____

IMPROVEMENT PLAN REVIEW CHECK LIST (ENGLISH)

The improvement plans accompanying this check list are submitted for your review. They have been prepared by me or under my direction and checked for conformance with the approved tentative map (or plan), the conditions of approval and the Contra Costa County Ordinance Code (especially Title 9).

_____
Engineering Firm

Contact Person: _____

Telephone No.: _____

Assessor's Parcel No.: _____

Tentative Map Expiration Date: _____

FOR OFFICE USE ONLY

( ) First Check
( ) Recheck
___ Sets of Plans
( ) Hydrology & Hydraulic Calculations

(Preliminary) Bond Estimate $_____

Plan Review Fee $_____

( ) Signing & Striping Plans
( ) Structure Calculations

Assigned to: _____

INSTRUCTIONS: Use a ✓ or "x" to indicate you comply or N/A to indicate not applicable next to each item. Any requests for exceptions shall be made in writing and attached herewith.

I. GENERAL

___1. Applicable General Notes included (POL:21).
___2. 24" X 36" sheet size used, including borders (96-2.208).
___3. Title Block/scale/north arrow shown (96.2.208).
___4. Plans capable of microfilm reproductions - minimum 1/8 inch lettering. (96-2.208).
___5. Engineers name, number, expiration date and signature included (96-2.204).
___6. Vicinity Map shown (must be microfilmable).
___7. Sheet Index and key map included for 3 or more sheets (96-2.204).
___8. Limits of Public Works inspection clearly shown on plan, typical section, and bond estimate. (particularly on LUP's & DP's, etc.)
___9. Street light locations/legend/PG&E signature shown (96-6.214). If 10 or more street lights are required then the light will be shown on a contiguous plan view of the entire development.
___10. Request for annexation to Lighting District _____ submitted. (Accompanied by map and metes and bounds description and annexation fee.) (96-6.602 & 6.604).
___11. Curb grade plans prepared by Public Works (if available) have been incorporated into improvement plans and verified as adequate.
___12. Curb grade plans prepared by Engineer for review by Public Works and cross-sections @ 50' max. intervals along road frontage and extending 150' min beyond limits of work. Profile line, centerline, and E.P. shown for 500 beyond subdivision boundary.
___13. Signing and striping plan plus existing striping included in improvement plans.
___14. Development No. (SUB, MS,LUP,DP) shown on each sheet.
___15. Fire District signature shown for access and fire hydrant location (96-14.004).
___16. Verification of land rights for off-tract work (title report, recorded easement, right of entry, etc.)
___17. Permits required from other agencies (Fish & Game, Caltrans, Army Corps of Engineers, Flood Control, etc.)
___18. Right of entry submitted for review for all off-tract work (96-4.204).
___19. Plans for landscaping within the public right of way submitted for review.
___20. Fence required along water district canals (918-2.006).
___21. Water testing required before paving for grades less than 1%.
___22. Provide annotated conditions of approval (explaining how each COA has been satisfied).

II. ROADS

A. Typical Sections

___1. Structural sections indicated per R-value (98-8.204).
___2. Curb type indicated (96-2.204 and CA 70i, CA 71i).
___3. Right of Way and street width dimensions shown.
___4. 2:1 max. cut/fill slopes shown beginning @ R/W lines for cohesive soils 4:1 max for sandy soils - Soils Report verifying exceptions.
___5. Crown Slope indicated (98-8.208).
___6. Sidewalk shown (96-8.402).
___7. Pedestrian or bicycle facilities shown per Caltrans standards (96-8.2).
___8. Pavement Design Chart shown with T.I. values for review.

B. Plan Views

___1. Radius of curvature shown on all curves (98-6.016).
___2. 20' curb return radii shown (96-12.404) (30' for major thoroughfares and industrial streets).
___3. 24' min. curb opening for private road intersection.
___4. Horizontal curves and sight distance designed per Highway Design Manual.
___5. Cul-de-sac radius (35' min.) shown (96-12.402).
___6. Private road turnarounds shown (96-12.406).
___7. R/W and street width dimensions shown.
___8. Centerline stationing shown @ 100' intervals and @ all curves B.C.,E.C.
___9. Lot/parcel lines and numbers/letters indicated.
___10. Valley gutters indicated. Flag flow lines at quarter points on curb returns and valley gutter centerline (CC 70i).
___11. Stationing and offsets of all drainage structures shown.
___12. T/C elevation @ all drain structures w/invert and FL elevations shown. (Invert and FL elevations may be shown on profile if preferred. If profile is not on same sheet as plan view, T/C, invert, and FL elevations must be shown on profile).
___13. Drainage easements shown and dimensioned.
___14. Location of underground pipes and utilities shown (96-2.204).
___15. Street monuments shown (96-2.204).
___16. Off-tract slope easements shown, with x-sections, topography and offer of dedication for slope easements submitted for review.
___17. Pedestrian Paths shown (96-8.2) Basic grades shown.
___18. Wheel chair ramps shown at returns per Caltrans RSP A88A.

C. Profiles

___1. Vertical curves designed for proper speeds per Highway Design Manual (98-6.010).
___2. Minimum vertical curve lengths observed (98-6.012).
___3. Curb returns and cul-de-sac profiles shown (high and/or low pts. indicated when vertical curve is used).
___4. Vertical curve used for grade breaks greater than 2%. (3% on sag curves)
___5. 6% maximum gradient observed @ intersecting streets (98-6.008).
___6. 6% maximum grade observed across intersections (98-6.006).
___7. 1% minimum grade observed on all streets (98-6.004).
___8. Maximum street grades per ordinance (98-6.002).
___9. Underground pipes and utilities shown (96-2.204).
___10. Existing ground on centerline shown. Where topography is steep, existing ground left and right of centerline has been shown. Cross sections may be required.
___11. Finish grade profile for centerline and for top of curb shown (left and right) if special grades required.
___12. Cul-de-sacs all have 1% to 4% cross slope between gutter lip and high point.
___13. Super elevation grades shown where required by Highway Design Manual.
___14. Back of curb flow diverters indicated on proposed streets with grades over 5% when no sidewalk installed (CD 04i).
___15. Centerline profiles of intersecting streets shown to their point of intersection. (Showing curb return or other profiles in lieu of the centerline profile is not an adequate or correct representation.)
___16. Off-tract profile to catch point shown where road is constructed to subdivision boundary.
___17. Centerline stations and elevations shown @ 100' minimum intervals and @ all BVC, EVC, PIVC, and grade breaks.
___18. Profile slopes indicated.

III. DRAINAGE

A. Hydrology-Hydraulics Calculations

___1. Contour maps - continue for 100 feet ± beyond property.
___2. 100-year water surface calculations completed when natural watercourse or drainage facility flows through or adjacent to subdivision or the property lies within special flood hazard area or flood prone area and water surface shown on plans (914-2.002).

__3. EGL, HGL, FL EL, Q, A, S, V, freeboard at structures, structure losses, tailwater assumptions, super or subcritical flow all indicated.
__4. Adequacy of in-tract drainage system verified (914-2.002).
__5. All starting water surface calculations adequately verified. (When computing beginning watersurface in natural watercourse and no obvious point of control is available, begin 500' downstream and work up to point in question.)
__6. Adequacy of off-tract drainage system verified (914-2.004).

B. Easements

__1. Off-tract drainage improvements (plan and profile) and accompanying easements shown. Off-tract offers of dedication for drainage easement submitted for review.
__2. Off-tract work to be done but no easement requirements. Right of entry submitted for review (96-4.204).
__3. Easement widths indicated for:
a. Closed conduits (914-14.004).
b. Open channels (914-14.006).
__4. Sufficient X-sections submitted to verify easement widths and Development rights for open channels.
__5. Access and ingress easements shown, graded to be useable (914-14.008).
__6. Minimum 12' ingress easement to public way provided to all access easements (914-14.008).
__7. Minimum 40' centerline radius for access easements shown (914-14.008).
__8. Structure setback line indicated and location verified with X-sections for unimproved channel. (914-14.012).
__9. Fences shown as required where street crosses watercourse or drainage structure (918-2.004)
__10. Fences shown as required at outside boundaries of open lined channel easements and water district canals (918-2.006).

C. Structures

__1. Inlet depths without manhole bases and max. dia. pipes through inlets observed.

Type A	6'	CD 20i	36" front	30" side
Type B	12'	CD 21i		30" side
Type C	4'	CD 22i	36" front	24" side
Type D	6' CD 23i	CC 3016	36"front	24" side
Type E	6' CD 24i	CC 3017	36" front	24" side
Type F	12'	CD 25i	36" front	24" side

__2. Max. diameter pipes through manholes observed.

Type I	24"	CD 30i
Type II	42"	CD 31i
Type III	60"	CD 32i

__3. 1.25' minimum freeboard in inlets and manholes (914-8.016).
__4. H G L shown in all structure profiles.
__5. Type C inlet shown with grate unless in pedestrian area, FL elevation of side opening also indicated (CD22i).
__6. Structure type indicated on plan or on structure list on same plan sheet.
__7. Type B or E Inlets used on streets with grades 6% or steeper.
__8. Steel reinforced copolymer polypropylene plastic steps (or equivalent) provided for structures over 4 feet deep.
__9. Gutter apron lengths for A or B inlets specified for profile grades 3% or greater.
__10. Indicate internal dimensions of non-county standard drainage structures used in private systems.

D. Major Structures

__1. Full size plans with adequate rebar/structural details shown.
__2. Specifications provided.
__3. Soils report with log of test borings and water table elevation included.
__4. Structural calculations, wet stamped and signed by the civil/structural engineer.
__5. Hydrology/hydraulics provided calculations included for structures influenced by a watercourse.
__6. Show proof of regulatory permits acquired.
__7. Provide shop drawings and material specifications (for large culverts and modular walls).
__8. Include cost estimate and quantity calculations.
__9. Independent design check calculations (for bridges only) provided.
__10. Provide scour analysis on abutments and walls over/adjacent to a creek or stream.
__11. Traffic control plan for replacement structures prepared and approved prior to commencement of construction.
__12. Proof that necessary right of way/construction easements has been acquired.

E. Pipe

__1. Closed conduit minimum slope of 0.003 observed (914-8.004).
__2. Gage of corrugated steel or aluminum pipe noted on plans (914-8.010).
__3. Water directed into inlet does not reverse the direction of flow (914-8.012).
__4. Minimum centerline radii of pipe checked. Beveled RCP lengths specified (bevel one or both ends) and stationing of E.C. and B.C. indicated.
__5. Outlet protection for closed conduits or lined channels provided (914-6.210).
__6. 2' minimum cover over pipe observed (provided manufacturer specs does not require more) unless special design and calcs. submitted, 3' minimum cover for plastic pipe.
__7. Design Q shown on pipe profile.
__8. Minimum cleansing velocity of 2 FPS with half design flow observed.
__ 9. 18" minimum pipe size for public system.

F. Channels

__1. Maximum velocity in earth channel verified by soils report - minimum velocity 3 fps (914-6.202, 6.204).
__2. Improved earth channel side slopes shown to be 2:l or less steep as specified by soils report (914-6.206).
__3. Lined channel side slopes as specified by soils report (914-6.210).
__4. Areas noted to be cleared of structures, trees, brush, and debris within natural channel and watercourses (914-4.006).

IV. LANDSCAPING (Public Right of Way)

__1. Three sets of landscape plans consisting of irrigation plans and planting plans for public improvements only. All plans will be reviewed by the Grounds Maintenance Division of the General Services Department for completeness and estimates of maintenance and utility costs.
__2. Two copies of estimate of cost of Landscape Improvements from licensed landscaped architect.
__3. Notarized application for annexation to County's AD 1979-3, LL-2, signed by corporate officer.
__4. Annexation into County's AD 1979-3, LL-2 including completion of CEQA process prior to recordation of final/parcel map in compliance with Proposition 218.
__5. Approved and notarized submittal of completed: Right of way Landscaping Subdivision Agreement and Improvement Security Bond prior to recordation of Final/Parcel Map.
__6. Receipt of payment of landscape plan review and field inspection fees prior to recordation of Final/Parcel Map.

V. STREET LIGHT (Public Right of Way)

__1. LAFCO request for annexation into CSA L-100 with map, meets and bounds description and annexation fees. (96-6.602 & 6.604)
__2. Annexation into CSA L-100 in compliance with Proposition 218.
__3. Submit street light plans including photometrics.

VI. ASSESSMENT DISTRICT

__1. If land is in an assessment district, the bond is a lien on the land. The bond must be paid in full, or a segregation fee must be paid prior to issuance of building permits.

DESIGN ENGINEER'S COMMENTS: