CITY OF OAKLEY
IMPROVEMENT PLAN REVIEW CHECKLIST
PUBLIC WORKS AND ENGINEERING DIVISION
3231 MAIN STREET
OAKLEY, CA 94561
PH. (925) 625-7000 FAX (925) 625-9194

IMPROVEMENT PLAN REVIEW CHECKLIST

The improvement plans accompanying this checklist 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 City of Oakley Ordinance Code (especially Title 9).

Subdivision No.: _____

_____

Date: _____

Signature: _____

RCE No.: _____

Expiration Date: _____

Contact Information

Engineering Firm:	Developer:
Contact Person:	Contact Person:
Address:	Address:
Telephone:	Telephone:
Fax:	Fax:
Email Address:	Email Address:

Assessor's Parcel No.: _____

Tentative Map Expiration Date: _____

FOR OFFICE USE ONLY
( ) First review Date: _____

( ) Second review Date: _____
( ) Third review Date: _____
( ) Re-review
___ Sets of plans
( ) Hydrology & Hydraulic calculations
( ) Soils report
( ) Landscape plans (2nd Check)
( ) Signing & striping plans
( ) Structural calculations (2nd Check)
( ) Joint trench and lighting plans (2nd Check)

Preliminary Bond Estimate $ _____
Plan Review Fee $ _____
No plan review will occur until fees are paid and receipted. If any accelerated review is requested adjust fees accordingly.

INSTRUCTIONS: Place √ 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. (see enclosed)
___ 2. 24"x 36" sheet size 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 hand lettering and 1/10" computer generated lettering. (96-2.208).
___ 5. Engineer's name, number, expiration date until plans are approved. Place a preliminary stamp on plans.
___ 6. Vicinity Map shown (must be microfilm able).
___ 7. Sheet Index and Key Map (for 3 or more sheets) (96-2.204).
___ 8. Limits of Public Works inspection clearly shown on plan, typical sections and details.
___ 9. Street light locations/legend/PG&E signature block shown (96-6.214). If 10 or more streetlights are required then the lighting will be shown on a separate plan. Entire development on one street.
___ 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. Submit a list of preferred street names in writing.

II. ROADS

A. <u>Typical Sections</u>

___ 1. Pavement Chart with structural sections include R-value and TI (98-8.204).
___ 2. Curb type indicated (96-2.204 and CC306).
___ 3. Right-of-way and street width dimensions shown.

___ 4. 2:1 max. cut/fill slopes shown beginning 1' behind R/W lines for cohesive soils (4:1 max. for sandy soils) – Soils Report to verify exceptions.
___ 5. Cross Slope indicated (98-8.208). 2% min. C_____); 4% max.
___ 6. Sidewalk shown (96-8.402) and dimensioned.
___ 7. Pedestrian or bike trails shown (96-8.2) per Caltrans standards.
___ 8. Extend curb base to subgrade.

B. <u>Plan Views</u>

___ 1. Radius and length shown on all curves (98-6.016).
___ 2. 30' 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 curb radius (40' min.) shown (96-12.402) and approved by Fire Dept. (minimum radius 150')
___ 6. Private road turnarounds (96-12.406) per Fire Dept standards.
___ 7. R/W and street width dimensions shown.
___ 8. Centerline stationing shown @ 100' intervals and @ all curves B.C.E.C., P.R.C. (_____).
___ 9. Lot/parcel lines and numbers/letters indicated.
___ 10. Stationing and offsets of all drainage structures shown (_____).
___ 11. T/C elevation @ all drain structures shown. (Invert and FL elevations to be shown on profile. For commercial or retail site where profile is not on same sheet as plan view, T/C, invert, and FL elevations must be shown on plan view). Min. 1' clear @ crossings with other pipes.
___ 12. Drainage easements shown on plan and on map.
___ 13. Location of underground pipes and utilities shown (96-2.204).
___ 14. Street monuments shown (96-2.204) at center line.
___ 15. Off-tract slope easements shown, with x-sections, topo and offer of dedication for slope easements submitted for review.
___ 16. Pedestrian paths shown (96-8.2) Basic grades shown.
___ 17. Wheel chair ramps shown at returns per State Standard Plan.
___ 18. FL elevations @ 50'intervals on ditches. 2% min. slope (_____).

C. <u>Profiles</u>

___ 1. Vertical curves and transitions designed for proper speeds and stopping sights per Highway Design Manual (98-6.010).
___ 2. Minimum vertical curve lengths observed (98-6.012).
___ 3. Separate 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 1%.
___ 5. 6% maximum gradient observed @ streets entering an intersection (min. 30' beyond return.) (98-6.008).
___ 6. 6% maximum grade observed across intersections (50' beyond returns) (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 at centerline shown. Where topography is steep, existing ground left and right of centerline to be shown. Cross sections may be required.
___ 11. Finish grade profile 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 and approved by the City Engineer.
___ 14. Back of curb flow diverters indicated on proposed city streets with grades over 5%, when no sidewalk is installed (CC108).
___ 15. Dashed 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. Extend off-tract profileline to conform point when road extends beyond subdivision boundary.
___ 17. Stations and elevations shown @ 50' mimimum intervals and @ all BVC, EVC, PIVC, and grade breaks.
___ 18. Slopes indicated for pipes and street in profile view.
___ 19. X-sections @ 50' intervals for road widenings or ½ width roadways.

III. DRAINAGE

A. <u>Hydrology-Hydraulics</u>

___ 1. Contour maps – continue for min. 100 feet ± beyond property to limit of watershed (3309.4 UBC)..
___ 2. 10-year and 100-year water surface calculations provided and water surface shown on plans (914-2.002).

___ 3. Hydrology Map to be included with calculations. Inlet numbering and area designation to match calculation and Improvement Plans.
___ 4. C, EGL, HGL, FL, EL, Q, A, S, V, freeboard at structures, structure losses, tailwater assumptions, super or subcritical flow all indicated in calculations.
___ 5. All starting water surface calculations adequately verified. (When computing beginning water surface in natural watercourse and no obvious point of control is available, begin 500'downstream and work up to point in question.)
___ 6 Adequacy of in-tract drainage system verified (914-2.002).
___ 7. Adequacy of off-tract drainage system verified (914-2.004).
___ 8. Q_{10} requirements:
Freebd = 1.25'
V_{min} = 2 fps
S_{min} = 0.003
C = 0.65 (Residential) 0.9 (Commercial)
___ 9. Q_{100} requirements:
Contained within street
Maximum 6' gutter spread
Overland release shown (if required)

B. Easements

___ 1. Off-tract drainage (street, etc.) improvements (plan and profile) and accompanying easements shown. Submit legal and plats for off-tract offers of dedication for drainage easement for review.
___ 2. If off-tract work to be done has no easement requirements, submit right-of-entry 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, and graded to be useable (914-14.008).
___ 6. Minimum 15' ingress easement to public way provided to all access easements (914-14.008).
___ 7. Minimum ____' 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'	CC3011	36" front	30"side
Type B	12'	CC3012		30"side

Type C	4’	CC3013	36” front	24”side
Type D	6’	CC3016	36” front	24”side
Type E	4’	CC3017	36” front	24”side

___ 2. Max. diameter pipes through manholes observed.

Type I	24”	CC3020
Type II	42”	CC3021
Type III	60”	CC3022

___ 3. 1.25’ minimum freeboard at inlets and manholes (914-8.016), measured from grate.
___ 4. HGL shown at all structure in profile.
___ 5. Type C inlet shown with grate unless in pedestrian area, FL elevation of side opening also indicated (CC3013).
___ 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. Ladder grab irons provided for manholes over 12-feet deep; also bolt rims.
___ 9. Gutter apron lengths for A or B inlets specified for profile grades 3% or greater.
___ 10. Indicate internal dimensions of non-standard drainage structures used in private systems.
___ 11. Max 400’ between structures.
___ 12. Max. 600’ runoff to 1st structure. Max. _____spread @ gutter.
___ 13. Maintain min. clearance from CB to dwy (5’) and to mailbox (3’). (CC_____)

D. <u>Pipe</u>

___ 1. Closed conduit minimum slope of 0.003 (914-8.004).
___ 2. Natural watercourses are to be placed in closed conduits for flows less than 80 cfs (914-8.014).
___ 3. RCP Class III >24”, HDPE allowed for <24”; CIPP>30” or RCP.
___ 4 Water directed into inlet does not reverse the direction of flow (914-8.012).
___ 5. Minimum centerline radii of pipe checked. (80% of mfg’s recommended deflection.)
___ 6. Outlet protection for closed conduits or lined channels provided (914-6.210). Size determined by Q & V.
___ 7. 3’ minimum cover over pipe observed (provided manufacturer specs does not require more) unless special design and calcs. submitted. (1002-8.002).

___ 8. Design Q and HGL shown on pipe profile.
___ 9. Minimum cleansing velocity of 2 FPS with half flow design.
___ 10. 18" minimum pipe size.
___ 11. Label length, slope and type of pipe.
___ 12. Min. 1' clear @ crossings with other pipes.

E. <u>Channels</u>

___ 1. Max. velocity in earth channels to be verified in Soils Report. Min. slope is 1%; min. velocity is 3 fps (914-6.202 & 204).
___ 2. Side slopes of improved earth channels to be 2:1 or less, as specified in Soils Report (914-6.206).
___ 3. Side slopes of lined channels to be as specified in Soils Report (914-6.210)
___ 4. Note areas to be cleared of structures, trees, debris, etc. in natural channels and water courses (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 Planning and Engineering departments for completeness, estimates of maintenance and utility costs.
___ 2. Two copies of estimate of cost of Landscape Improvements signed by licensed landscaped architect.
___ 3. Notarized application for annexation to city's AD_____, LL_____, signed by corporate officer.
___ 4. Annexation into AD_____ 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.
___ 7. Show irrigation stub on Improvement Plans.
___ 8. Plants and trees to be drought tolerant.
___ 9. Plants to be grouped into compatible water use (WUCOALS).
___ 10. Plans to be part of improvement plans.
___ 11. For public landscaped areas.

V. STREETLIGHT (Public Right-of-Way)

___ 1. Plans to be part of improvement plans.
___ 2. LAFCO request for annexation into CSA L-100 with map, meets and bounds description and annexation fees. (96-6.602 & 6.604).
___ 3. Annexation into CSA L-100/in compliance with Proposition 218.
___ 4. Specify type, height, arm length, W.
___ 5. For _____ alternating pattern, the spacing is to be 200' (180'-220').

___ 6. Consult engineering department for locations or locations to be specified with return of first plan check.

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.
___ 2. Engineer's report.
___ 3. Plan and diagram.

VIII. GRADING

___ 1. Existing contours shown as dashed (or screened) lines.
___ 2. Contours to extend a min. 50' beyond boundary. Include drainage area and limit of watershed.
___ 3. Contour intervals to be per Ordinance (_____).
___ 4. Proposed contours to be shown to daylite. (show daylite line on mass grading plan).
___ 5. Sufficient information to be shown at perimeter to indicate that proposed grading conforms to existing without creating the need for perimeter ditches, or other drainage to prevent problems.
___ 6. Provide typical X-sections at boundaries.
___ 7. Slope banks to conform to Soils Report, Ordinance and UBC.
___ 8. Show retaining walls. Show elevations at top and bottom of walls. (Review of grading plan does not provide permit for retaining walls).
___ 9. Plans to be signed by Soils Engineer.
___ 10. Slope terraces to be at intervals recommended by Soils Report or UBC (whichever is more stringent).
___ 11. Min. 10' benches.
___ 12. Min. 4% slope on ditches (UBC).
___ 13. Min. cut slope. _____
___ 14. Min. full slope. _____
___ 15. Provide erosion control plan.
___ 16. Provide cc of SWPPP.
___ 17. If necessary a demolition plan showing limits of removals of trees, buildings, structures, etc.
___ 18. Provide for checking purpose a blank copy of site topography with boundary. Show and elevations per item 2.
___ 19. Provide elev. @ each lot line in plan view.

A. General Requirements:

All construction shall be shown graphically to scale. The use of notes is not a substitute for showing construction graphically.

Subdivision number.

Vicinity map shown on cover sheet.

General Notes (see Section 14).

City elevation datum and bench marks used.

Legend provided.

All sheets (including landscaping plans) 24" X 36".

Plans adequate for microfilming (min 1/8" letters or typewritten).

Private landscaping improvement plans are not to be included in the plan set.

Joint trench plans are not included in the overall plan set.

Sheet index and key map on cover sheet for three or more street improvement plan sheets.

Adjacent sheet numbers.

Margin: 1" all around.

Sheet No. _____ of _____ sheets – all sheets numbered consecutively.

North arrow – all sheets.

Street Index Map provided.

Final approved street names shown.

Scale shown on all sheets.

Improvement plan horizontal scale : 1" = 40' (1" = 10', 1" = 20', 1" = 30', also allowed). Grading plans may be at the 1" = 50'.

Plan and profiles on all construction

All crossing pipelines shown with elevations at crossings.

Easements obtained for all off-tract utilities (i.e., sewer, storm and water) and street improvements.

Soils Report reviewed and recommendations incorporated into design.

Permits required from other agencies (Zone 7, Fish and Game, Army Corp of Engineers, Alameda County Public Works).

Check for conformance with adjacent tracts.

100 Scale systems map provided with the following items including by the second plan check submittal:
- Sewers (manholes and sizes)
- Storm (manholes, inlets, sizes)
- Water (valves, sizes)
- Streetlights
- Fire hydrants

Title block in each sheet shall identify the area of work covered on that sheet.

Sheet index on sheet 1 (showing all sheets including wall and landscaping plans). Title conforms to title block on individual sheets.

The revision block shall have a place for City approval and shall only be used for revisions that occur after the City Engineer has signed the plans as approved. (Plan check revisions are not to be shown in the revision approval block). One column in revision block shows the revision number. The second column describes the change for that revision. The third column provides a space for the City to initial and date the revision. The cover sheet has a master revision table that summarizes all revisions in the plan set, and has a fourth column that shows the sheets that are affected by the various revisions.

Field review to insure existing conditions and problems are reflected on the plans (i.e., signing, striping, utilities, drainage, structures, etc.).

Improvement plans reviewed for conformance with "as-builts" for existing adjacent infrastructure.

Registered Engineer's signature, number and expiration date on cover sheet; signature and R.E. stamp on each sheet upon approval.

City Engineer's approval block, R.E. number and the expiration date on the Cover Sheet and on the first sheet of the grading plans.

Street name sign plate legend per detail at the end of this Development Plan Check Manual. Block numbering assigned by the City during the second plan check.

B. <u>Streets:</u>

Minimum slope 1.00% .

Maximum street grade 20% for a short distance on residential and 15% on major streets; cross-section in accordance with City Standards.

Street crown profile provided within limits of street intersections if either street slope exceeds 3% within the limits of the curb returns.

Vertical curves provided on grade changes of 1.0% or more, per Caltrans stopping sight distance (minimum length of 20 feet).

As a general guideline, under standard conditions sight distance shall be provided per the Caltrans Highway Design Manual based on the following design speeds:
Local streets = 35 mph
Collector streets = 40 mph
Major streets = 45 mph

Names, widths and location of streets agree with approved tentative map. Street names change at all elbows.

Curb to curb width of street and curb to property line dimension shown at least once each plan view.

Pavement section design chart provided and checked following Caltrans Highway Design Manual using soils report for "R" values and City Standard ST-11 for traffic index as a minimum unless a higher index has been required by Conditions of Approval.

Paved turnarounds shall be provided at the end of stub streets over 200 feet in length. They shall be either on-lot or off-tract and an easement shall be provided to the City.

Minimum curve radius of 250' on local streets. Minimum radius of 600' on collector streets. The minimum radius of the inside lane (lane closest to the radius point) for a major street will be based on design speeds using Caltrans criteria. Superelevaton of streets is not permitted without special written permission of the City Engineer for local streets. Major collectors shall be per Caltrans criteria.

Minimum drainage (cross slope) of 1% from crown to gutter within limits of curb returns, in elbows, and from pavement crowns to lip of gutter at midpoints (at access ramps). Where this drainage can't be provided, all concentrated drainage upstream of intersection shall be prohibited from entering the intersection by location of a storm water inlet at the upstream curb return.

The crown of a collector street or a minor street shall intersect a major street at the outside edge of outside lane.

The crowns of minor streets or collector streets shall match at intersections.

Grade breaks of tangents to vertical curves not allowed (tangent line of curve shall equal slope of projected line for a minimum distance of 30 feet from BC to EC).

Street stationing agrees with distances on final map.

Design elevations for widening of an existing street based on street cross sections and sufficient profiles. Submit cross sections at 50 foot maximums intervals to assure proper conform. Cross sections need not be included as part of final plans.

Provide sufficient grades and cross-sections at ties with existing streets to demonstrate that a proper conform as been provided.

Conform new pavement per detail.

Barricade and appropriate signing provided at end of stub streets.

No walls within the public right-of-way-walls within a landscape easement shall be shown on the street improvement plans in plain and profile (show "stair-stepping of wall). Show top of wall elevations, bottom of wall elevations, and horizontal location of wall. Structural details of wall shown on plans.

Backing lot wall, and adjacent building pad elevations shall be shown in street profile.

Structural calculations submitted for backing lot walls, wet signed and wet stamped by a Registered Civil Engineer with the second plan check.

Monuments shown per final map locations.

Lot lines shown.

Streets intersect at 80° to 100° angles. The central angles of intersection returns fall within 80° to 100°.

On local streets, the centerlines of streets not in alignment must be offset a minimum of 150 feet. On collector streets, the centerlines of streets not in alignment must be offset a minimum of 250 feet. On major streets, the minimum of offset must be 250 feet.

Decorative pavement conforms to Detail _____.

Street trees with stations shown on the street improvement plans. (not on a separate sheet). Street tree types noted on engineering plans (and agree with landscaping plans, if any).

Street grades match grading plan grades.

Typical street cross sections shown and all street names labeled. All street cross sections on same sheet. Separate street cross sections provided for a street with more than one street width.

"Future Construction" not allowed on improvement plans (or else shown faded out. "Existing Construction" shown with dashed lines.

When constructing a roadway that will directly connect with an existing roadway of a different width, it is necessary to install a transition between the two. The length of the transition conforms to Caltrans standards.

Top of driveway flare has clearance of 3 feet from property line, streetlight, fire hydrant (10' in commercial areas), another driveway flare. Top of driveway flare has clearance of 8 feet from street tree. Top of driveway flare has clearance of 10 feet from curb return.

Permanent slope easements provided for streets located in cuts or fills on existing side slopes. Easement to extend 10 feet below toes of slope.

C. Curb, Gutters and Sidewalk

Top of curb profiles shall be shown (including for cul-de-sac bulbs, knuckles, and for curb returns with vertical curves).

Minimum slope = 1.0%; 1.00% on cul-de-sac and curb returns.

Top of curb elevations and stations shown at curb returns, grade breaks, BC and EC, vertical curves, lot lines, fire hydrants and electroliers and at 50 feet stations in the profile.

Maximum elevation difference between curb returns at a single return is 2 feet.

Maximum gutter slope at an access ramp is 4% (unless A.D.A. compliance of access ramps can be demonstrated with steeper gutter slopes).

Separate curb stationing provided along the face of curb on knuckles and cul-de-sac bulbs.

Curb elevations check mathematically.

Valley gutters not permitted.

All proposed sidewalks shall be shown on the street improvement plans.
Vertical curves used on curb returns, knuckles, or cul-de-sac bulbs with a grade change exceeding 1.0% (profile provided). Minimum length for a vertical curve is 20 feet.

Pedestrian walkway provided per _____.

Sidewalks provided per _____ or _____.

Access ramps shown at each return per Caltrans Standards.

Median islands shall not extend into crosswalks.

Driveway centerline stations shown on plans. Widths of driveways specified in notes or on plan.

D. Storm Drainage

Hydrology/ hydraulic study completed in accordance with the _____. Information in this study must be summarized in a table similar to the one included at the end of this Development Plan Check Manual.

System agrees on County storm drain master plan.

Channel plans submitted by developer to Flood Control for approval.

Channel plans submitted to Engineering Division for information and review of compatibility with City facilities.

Plan and profile shown. Hydraulic grade lines and ten year flows noted on the profiles.

Lines adequately sized per City's storm drain master plan for ten-year storm and to handle all future upstream development. Hydraulic calculations checked (Minimum pipe size = 18").

All lines have adequate cover in accordance with City's Pipe Design Criteria listed near the end of this plan check manual.

All pipes with less than 3 feet of cover from sub grade must show the type of pipe on the plans (profile view).

Manhole structure used for deep inlets (greater than or equal to maximum value shown in details _____ and _____) Special design and calculations submitted for deck transition between manhole base and inlet top.

Steel reinforcing provided in manual base for precast inlets or precast manholes deeper than 10'.

Ten-foot gravel access road provided to all manholes or inlets outside of paved area.

Storm lines located per City Standard Detail.

Check conflicts with other utilities.

Actual elevations and locations of existing facilities shown and tie in to existing facilities checked.

Elevations and distances mathematically correct. All grades and inverts shown on profile.

System can easily be extended to serve future development.

All drainage channels fenced with a 6' high chain link fence per Contra Costa Flood Control

Access provided to drainage channels for maintenance equipment.

On street drainage does not exceed a maximum gutter run as follows: In no case shall the maximum gutter run exceed_____ regardless of street slope.

Drainage inlets provided at all low points, with at least two feet clearance from curb returns, five feet clearance from top of driveway flares, five foot clearance from fire hydrants.

Concrete interceptor ditches provided on uphill side of tract to carry all off-tract drainage to a storm drain. Provide necessary easements. For interim conditions, where there is a tentative map approval on the adjacent property or future phase, interim interceptor ditches may be constructed of asphalt. Minimum slope of A.C. or concrete ditches is 0.5%.

Maximum distance between storm manholes or inlets shall be 400.

Minimum velocity allowed in pipe is 2.0 feet per second when half full.

Hydraulic grade line shown on profile. Minimum top of curb elevations to be 1.25 feet above hydraulic grade line.

Field inlet gate elevations 0.75 feet above hydraulic grade line.

Storm drains cross other underground facilities at no less than a 45° angle and a 90° angle where possible.

Pipe sizes fit inlet dimensions. Pipes not permitted to enter through the corner of a structure. If not, provide detail of special inlet.

Beveling of storm drainpipes not permitted. Curved storm drainpipes must follow allowable joint deflection per pipe manufacturer's recommendations.

Private on-site rear drainage system required for lots draining to rear (concrete "V" ditch, etc.) is not permitted

Cross section shown for concrete "V" ditches. Provide hydrology and hydraulic calculations for ditches 100 year design storm) demonstrating adequate capacity

Storm lines extended to all tract boundaries and pickup points

Dead ends plugged and marked above ground

Existing downstream facilities adequately sized to handle new flows.

Cross section shown for all drainage swales. Swales adequately sized to carry design flows. Minimum swale slope is 1%. Maximum slope is 3%. Side slopes shall be 2:1 or flatter.

Elevations shown in profile for all existing underground facilities crossed by new storm drain lines. Existing elevations verified by design drawings of potholing.

E. Traffic Sight Distance and Signing and Striping

Street name sign provided at each intersection and advance street name signs provided on major streets.

Street name sign plate legend filled out properly. Sample plate legend detail is at the end of this Development Plan Check Manual. City will provide block addresses with the second plan check.

Speed limit signs installed where appropriate.

School signing and markings provided near schools (yellow cross walks)

Crosswalks and limit lines shown per City Standard Detail ST-26. Crosswalk installed only where required by the City Engineer.

No stopping signs (R26S) shown on major and industrial streets 250' – 400' on center both sides, installed only on streetlights poles if possible.

Thermoplastic and reflective markers used for traffic striping. Painted striping not permitted.

Bike lanes shown per City Standard Detail
Appropriate warning signs and markings provided.

Transition signing and striping detailed at street tie-ins and widenings per Caltrans Standards.

Existing signing and striping shown, and modifications shown as appropriate for new conditions.

Replacement striping shown on plans in areas receiving pavement overlays.

Where a "no outlet" area is being connected to other developments, existing "no outlet" sign removed. Where a new "no outlet" area is being created, new "no outlet" sign is installed.

New striping shown in areas of street construction or street overlays.

Median R7 signs provided at first median nose (only)

One-way signs shown in median opposite driveways and streets where appropriate.

Stop signs provided where requested by the City Engineer.

Centerline striping provided where appropriate.

Street light locations shown on the signing and striping plan (street light locations must match street improvement plans and systems map)

As a general guideline, under standard conditions sight distance for medians and intersections shall be provided per the Caltrans Design Manual based on the following design speeds:

Local streets = 20 mph
Collector streets = 30 mph
Major streets = 40 mph

At all intersections, a sight distance triangle has been provided. The triangle shall be formed between the curb lines extended and the diagonal line joining points on the curb lines, which are 40 feet from their intersection. Within the triangle there shall be no sight obscuring wall, fence, sign, foliage (without trimming being required) or berming higher than 30 inches above the curb, street pavement surface. The signing and striping plan shall show the location of any wall, fence, utility box, or other objects, which may limit the sight distance within this area.

All signing and striping not covered by City Standards is per Caltrans current standards.

Fire hydrant markers shown on signing and striping plan.

Street lighting reviewed, including adjacent lighting, which may no longer be needed.

Left turn lane length determined by traffic study based on ultimate traffic volume and deceleration length. Minimum left turn lane length of 50'. Transition taper is 60' for streets with speed limits of 30m.p.h. or less, 90' for streets with speed limits between 30 m.p.h. and 40 m.p.h., and 120' for streets with speed limits greater than 40 m.p.h.

Street barricades with reflector shown on signing and striping plans.

Traffic control plans for each stage include lighting, signing, striping, barricades, and other traffic control devices as necessary.

F. Traffic Signals

Traffic Signals shown where required

Emergency Vehicle Pre-emption equipment shown per Fire Department requirements and specified as compatible with existing City equipment.

Internally illuminated street name signs mounted on pole mast arms and meet current City Standards.

A copy of technical provisions by the City for signal design and installation has been used. Special provisions reprinted on improvement plans.

3" signal interconnect conduit with pull boxes at 200' intervals provided.

G. Street Trees

Approved street tree species shown in the improvement plans.

Trees located 5' from water services and fire hydrants, 10' from sewer laterals, 8' from driveways, and 20' from streetlights and from curb returns (when there is separated sidewalk)

Street trees shown and stationed on the street improvement plans

H. Landscaping

General Requirement

Horticulture report provided (where appropriate)

Scale of plans in 1" = 20' or 1" = 10'

18" wide concrete divider strips provided at project boundaries or planting limits per Detail L-15

Water barrier included in cost estimate. Water barrier required as shown on detail

All walkways P.C.C. No asphalt concrete allowed.

Note provided stating that all landscaping, irrigation, and construction shall conform to the "City of Oakley Standard Details and Specifications for Public Works Construction"

Planning Division has notified Engineering that planting plan meets Planning requirements and Design Review Committee requirements.

Above ground utility boxes (transformers, etc.) shown and labeled on landscaping plans by the second plan check.

Landscape Grading:

Maximum slope of 3:1 in groundcover or shrub areas

Minimum of 1 foot level area in front of walls, 2 foot level area behind walls, and 3 foot level area behind sidewalk

Maximum slope of 4:1 in turn areas

Minimum slope of 1% in paved areas

Minimum slopes of 2% in planted areas

No drainage pockets or depressions

All areas drain away from foundations of buildings

Minimum swale slope of 1%

Landscaped areas graded to drain away from sidewalks (except in backing lot areas where drainage must be to the street)

Planting

Planting materials appear in the City Standard Details and Specifications, or else are approved by the _____.

Planting conforms with City Master Planting Plan (such as along major thoroughfares)

Chart showing botanical name, common name, size, and class of planting (tree, shrubs, or groundcover) provided on plan. Plants agree with recommendations of horticulture report (if required)

Square footage of planted areas and turf areas clearly shown on the plans, subtotaled by backing lot landscaping and by median landscaping.

Street tree varieties per the approved list

Minimum street tree size is 24" box

Minimum shrub size 5 gallons

Ground cover size 1 gallon

Trees within six feet of paved areas have root deflectors

Note provided stating that the contractor shall provide maintenance of all plants and planted areas for a period of 120 days after acceptance by City inspector.

Street trees 20' minimum from streetlights

Street trees 10' minimum from sewer laterals

Street trees 5' minimum from water laterals

Street trees 8' minimum from driveways

Street trees 20' minimum from curb returns (10' minimum from curb returns in residential areas with monolithic curb, gutter and sidewalk)

Plantings do not impair required sight distance at intersections and driveways.

Irrigation:

Irrigation services points shown

Service pressures shown at water meter on plans

Proper backflow prevention devices specified

Plans show flow rates in G.P.M. and precipitation rates in inches per hour

Adequate pressure provided at each sprinkler to maintain "head to head" irrigation

Head to head sprinkler spacing (second sprinkler located within radius of spray of first sprinkler). Sprinklers shall be located in a triangular arrangement.

Areas in different exposures and containing plants with different requirements irrigated on different circuits by different valves

In developments where backing lot areas are within a Lighting and Landscaping Maintenance District, and medians are maintained by the City, two separate irrigation and electrical systems shall be provided.

Lines crossing cross at a minimum angle of 45 degrees.

Sleeves provided at all crossings through concrete, pavement, or masonry. Sleeves shall be schedule 40 P.V.C. with half inch clearance provided for irrigation pipe

Quick Coupling Valve provided per 200 linear feet of planting area, or at each median

Irrigation pressures checked. Minimum service pressures as called for in nozzle charts provided. (Check pressure losses through water meter, backflow preventer, pipe, and valve for valve farthest from irrigation source.)

Irrigation for medians and backing lot areas on separate water meters (for those areas where medians will be maintained by the City, and the backing lot areas will be maintained by a Landscaping and Lighting District)

Walls:

For major streets, two feet of berming against 8 foot high walls on the street side of the wall, or else 6 foot walls on 2 foot berms. (top of walls at least 8 feet above adjacent curb, and 7 feet above pad, with only 6 feet of exposed wall on the street side.)

For collector streets, top of backing lot wall is 6 feet above highest adjacent grade (at least 6 feet above adjacent curb and 6 feet above pad)

Reduced allowable soil bearing pressures reflected in structural calculations for sound walls located above slopes or on berms. Alternatively, one additional foot of pier depth provided.

Plans submitted to Design Review Committee for approval

One wall design maintained between natural breaks such as streets

Wall height six feet on collector and local streets

Walls, including grades, and stations shown in plan and profile view on the street improvement plans.

Sight Distance Concerns:

Low ground cover and small shrubs only (less than 30" height when full grown) within the "sight distance triangle"

Planting in medians does not obstruct line of sight for traffic traveling at design speeds (minimum unobstructed line of sight provided at all locations per Clatrans Highway Design Manual – Section405.1). Obstruction is defined as an object higher than 3 feet above the level of the edge of pavement of the adjacent street within the sight distance triangle. Trees shall be trimmed (to the trunk) to a line at least 8 feet above the level of the intersection or center of the street.

Irrigation Materials:

Remote controllers per City Standard Specifications provided to operate remote control valves.

Controller selected which will operate correct number of valves

Where irrigation heads are more than 200' from the controller, Rainmaster RT-5/RRAD remote control unit (or approved equal) provided.

Sprinkler heads shall be per City Standard Specifications.

Pop-up only sprinklers

All irrigation pipes shall have sizes shown on plans. Pipe types must be per City Standard Specifications.

Backflow Preventer provided at water meter per City Standard Specifications

Controllers "Rainmaster" (or approved equal) only. Proper controllers to operate actual number of valves.

Low trajectory nozzles used in median islands to minimize street runoff.

Separate valves and water meter for each phase of landscaping.

I. Street Lights

Street lights located and spaced per City Standard Detail

Minimum of one street light at each intersection and at the throat of the cul-de-sac.

Adjacent existing lights shown on improvement plans and on signing and striping plan

Street light and street light box locations shown with conduit to proposed PG&E service point

Wiring design by an Electrical Engineer. Streetlight wiring diagram must be included in the improvement plan set and listed in the index of sheets. However, the wiring diagram may be submitted at the time of joint trench plan approval.

J. Grading Plan

Retaining wall locations (stationed), top and bottom of wall elevations dimensioned or noted on plans. Details of retaining walls shown on plans. Structural calculations submitted by a registered civil engineer.

Method of drainage behind retaining walls shown in detail and on plan (subdrains and drainage locations)

All lots drain positively to street frontage with minimum 1% slope (direction of drainage swale shown with arrows) Proposed grades shown at rear property corners and existing grades on adjacent lots.

Appropriate construction notes repeated on grading plan sheets

Truck haul route (in accordance with conditions of approval) specified on grading sheets.

Pads drain at a minimum of 2% to swale high points.

Existing surface and subsurface, buildings, wells, and trees (to remain or to be removed) shown on grading plan.

Existing contours shown (both on-site and off-site for a distance of 50 feet beyond the project)

Elevations of existing properties and top of curb at all lot corners shown

Retaining fence provided if grade discrepancies at grading boundary exceed 6 inches. Fence or wall detail provided.

Maximum slope 2:1 on all cuts and fills; 3:1 maximum slope in planted areas; 4:1 maximum slope in turf areas

Slope of 2% for a distance of 3 feet behind back of sidewalk (monolithic, separated, or meandering)

Drain away from backing lot walls to street at a minimum slope of 2%

In hillside areas terracing, interceptor ditches, and building pad setbacks from toes of slopes provided per the latest City adopted U.B.C. requirements.

Flood hazard zone delineated

Soils engineer wet stamps and signs original grading plan to indicate plan conformance with recommendations of soils report.

No grading within drip lines of existing trees to remain. Chain link fence provided at the drip line prior to start of grading operation

Maximum driveway slope is 12%

K. Erosion and Sedimentation Control Plan

Interim plan showing method of sedimentation control and erosion control during grading and construction of public works improvements shown.

Final plan showing details of specific measures to be constructed on-site or off-site to prevent surface erosion and/or disposition of sediment in City storm drains and in channels

Interim and final erosion and sedimentation control plans in conformance with the latest edition of the Manual of Standards for Erosion and Sediment Control Measures as published by the Association of Bay Area Governments

Silt fence provided at base of all slopes adjacent to public rights of way

All slopes higher than 2' , and steeper than 10%, protected from erosion. (By such methods as hydro seeding). Hydro seeding specifications included in notes on plans.

Check dams provided at every two foot change in elevation along drainage ways (suck as gutters or swales), both before and after paving.

Materials for implementation of erosion and sedimentation control measures stored on-site

Calculations for sediment basins (required for drainage areas larger than 5 acres) checked in accordance with A.B.A.G. standards

Other appropriate measures in accordance with A.B.A.G. guidelines and best management practices incorporated into plan.

Copy of NOI and SWPPP

K. General Notes:

All of the following notes included in the following sequence in general note listing on first or second sheet of plans, as applicable.

All construction shall conform to the latest City of Oakley Standard Details and Specifications.

BENCHMARK: The City monument at _____.

Finish grade profile represents top of curb.

All lot fill shall be done in conformance to the Soils Engineer's recommendations. See the soils report dated _____, by _____ Company.

Any existing wells encountered shall be abandoned and sealed per Contra Costa Health Department.

The contractor is responsible to notify all utilities 48 hours prior to any excavation so that their lines can be marked. Those to be notified include, but may not be limited to:
Underground Service Alert (800) 227-2600 (New Number)

PG&E Pacific Bell, TCI, Delta Ironhorse Sanitary District, and the City of Oakley

Any deviations or changes in these plans without official approval of the design engineer shall absolve the design engineer of any and all responsibility of said deviation or change (optional).

The surveyor shall be notified 48 hours in advance of when field staking is to be required.

Compaction tests will be performed on all trenches and street work to verify that compaction conforms to City Standards. The initial test and one re-test will be performed by the City (24 hour notice required). All additional testing will be at the Developer's/Contractor's expense.

All work adjacent to existing pavement section shall butt up to full existing section. Where full section is not encountered, continue removal of additional pavement until a full section is found. See City Standard Detail ST-25.

Monuments shall be installed at locations shown on the final map in accordance with the City Standard Details and Specifications.

The street lights shall not be installed until the Developer has provided an acceptable street light wiring plan signed and stamped by a registered electrical engineer indicating the wiring run location between the street light and the power source for City records.

Street trees are to be planted at each lot upon occupancy.

Mailboxes shall be installed at each lot in accordance with Post Office requirements.

All pipe grades shown as flow line elevations.

One 4" sanitary sewer lateral and cleanout shall be installed to each lot at locations shown on the drawings and an "S" stamped on the curb above the lateral.

A City- approved overflow device shall be installed on the sewer laterals of the following lots:

_____

_____

All water lines shall have a minimum cover of 48".

One water lateral shall be installed to each lot and a "W" stamped on the curb above the lateral.

Whenever possible sanitary sewer laterals to cross under water main.

Fire hydrants shall be per approved City list. Pavement markers shall be installed at each fire hydrant location per Detail W-1.

All fire hydrant installations will be subject to approval by the Fire Chief. Flow testing by the Fire Department will only be made at the request of the Public Works Inspector at such time as all work in the water supply system has been completed.

Prior to beginning any work on existing streets, advance-warning signs (C18 and C13) shall be installed.

Traffic Control shall be provided in accordance with Caltrans "Manual of Traffic Controls for Construction and Maintenance Work Zones" current edition. Failure to comply may result in immediate stoppage of work until the proper traffic control is in order.

The developer/owner shall have a job superintendent or a designated responsible representative on the job site anytime work is in progress during the construction of the project. The developer/owner shall advise the City Engineer who the designee is in writing.

The notice shall include an emergency notification phone number. The City shall be advised in writing if there is to be a change in job-site representative.

A pre-construction meeting of all the contractor's representatives involved in the project will be held prior to the start of construction at the request of the City of Oakley City Engineer.

The developer shall provide "As-built" plans for traffic signals within two weeks of signal turn-on.

Add additional general notes as required or desired. Examples listed below:

cc. Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility of job site conditions during the courses of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, idemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

dd. Permits shall be obtained whenever the work comes under the jurisdiction of any of the following agencies. After permit is obtained, the agency must be notified prior to work being done as required in the permit:

*****SHOW ONLY THOSE THAT APPLY ON THE DRAWINGS*****

(i) Caltrans, 2616 North Main Street, Walnut Creek, CA 94596
Phone: (510) 939-0400
Contact Person:

(ii) (Permits may also be required by affected Railroad companies or other utilities like these. List these)

(iii) (Permits may also be required by affected resource agencies such as Fish and Game, Army Corps of Engineers, Cal-Osha. List these)

ee. In industrial areas, all sanitary sewers shall be extra strength VCP.

ff. Channel construction shall conform to Contra Costa County Flood Control Standards and as shown on these plans

gg. Contractor shall provide samples of median hard surfacing for City approval per the Specifications.

hh. All storm sewers shall be Class III RCP unless otherwise noted on the plans.

ii. All property lines shall be marked with an indentation in the face of a curb.

jj. Developer shall provide the following to the City prior to tract acceptance for maintenance.

a. An elevation certification of all installed monuments from the surveyor. The elevation shall be noted on the record drawings;
b. An elevation certification of all pads from the surveyor;
c. A certification (final soils report) from the soils engineer stating that all grading has been completed in accordance with the recommendations for the preliminary soils report.

kk. The street structural sections shown on the plans are preliminary only. Final structural sections will be determined based on actual "R" value tests in the field following Caltrans flexible pavement design criteria.

ll. Construction Operations – Wastewater generated during construction shall not be discharged to the storm drain system. This includes waste from painting, saw cutting, concrete work, etc. The contractor shall make arrangements to eliminate discharges to the storm drain system and, if necessary, provide an area for on-site washing activities during construction. Materials, which could contaminate storm runoff, shall be stored in areas, which are designed to prevent exposure to rainfall and to not allow storm water to run onto the area.

mm. Pavement cleaning – Flushing of streets/parking lots to remove dirt and construction debris is prohibited unless proper sediment controls are used. Preferably, areas requiring cleaning should be swept.

nn. Storm Drain Inlets – Storm drain inlets must be stenciled or marked with the following statement: "NO DUMPING, DRAINS TO DELTA." Stencils may be obtained from the Water Resources Division of the Public Services Department.

oo. The design engineer shall provide "as constructed" drawings for installed traffic signals within fourteen calendar days of traffic signal turn on. Failure to do so shall result in additional occupancies being granted by the City.

pp. Erosion and sedimentation control measures shall be implemented by _____

The following notes shall be on both the grading plans and the street improvement plans:

qq. During grading operations, the contractor shall implement dust control measures both on-site and on the haul route, including (list actual haul route street names). Streets shall be swept a minimum of two times a day or as required by the City Engineer.

rr. All grading shall be in accordance with the Storm Water Pollution Prevention Plan prepared by the developer per the Notice of Intent on file with the State Water Resources Control Board.

L Improvement Plan Signature Blocks

a. Plans prepared by the City of Oakley staff:

_____

R.C.E. Expires

(RCE stamp required)

b. Plans prepared by outside consultants:

CITY OF OAKLEY
APPROVED BY:
CITY ENGINEER

_____

DATE

Outside consultant's signature block:

(COMPANY NAME)

_____

JOHN /JANE DOE DATE
(TITLE)

(RCE stamp required)

c. Plans prepared by the developer's engineer:

APPROVAL OF THESES PLANS DOES NOT RELEASE THE DEVELOPER OF THE RESPONSIBILITY FOR CORRECTION OF MISTAKES, ERRORS, OR OMISSIONS CONTAINED THEREIN. IF DURING THE COURSE OF CONSTRUCTION OF THE IMPROVEMENTS PUBLIC INTEREST REQUIRES A MODIFICATION OF OR A DEPARTURE FROM THE SPECIFICATONS AND DETAILS OF THE CITY OF OAKLEY OF THESE PLANS, THE CITY ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUCH MODIFICATION OR DEPARTURE AND TO SPECIFY SUCH MODIFICATION OR DEPARTURE AND TO SPECIFY THE MANNER IN WHICH SAME IS TO BE MADE.

APPROVED AS TO DESIGN ONLY BASED ON INFORMATION SUBMITTED HEREON.

APPROVED FOR THE CITY OF OAKLEY

_____

CITY ENGINEER DATE

Developer's Engineer's signature block:

(COMPANY NAME)
PREPARED UNDER THE DIRECTION OF:

_____

JOHN/JANE DOE DATE
R.C.E. 00000 EXPIRES XX/XX/XX
(RCE stamp required)

B. Bond Estimate Checklist

A. Grading

_____ Clear and grub
_____ Rough grading
_____ Fine grading (R.O.W.)
_____ Retaining Walls
_____ Fine Grading of Lots
_____ Erosion Control
_____ Stabilized construction entrance (s)

B. Street

_____ Pavement and base
_____ Curb and gutter
_____ Sidewalk
_____ Curb returns (including access ramps and curb and gutter
_____ Driveways
_____ Median curb
_____ Water barrier
_____ A.C. overlay
_____ Grinding existing pavement
_____ Bridges
_____ Concrete Valley Gutter
_____ Redwood Header

C. Storm

_____ Pipe
_____ Storm water inlets (street and field)
_____ Manholes

_____ Channels
_____ Outfall structure
_____ Gravel access road
_____ Concrete/asphalt "V" ditches

D. Sewer
_____ Mains
_____ Laterals with cleanouts
_____ Manholes
_____ Gravel access road

E. Water
_____ Mains
_____ Services
_____ Fire Hydrants
_____ Gravel access road
_____ Pressure reducing stations
_____ Blow offs
_____ Air Release Valves
_____ Butterfly valves
_____ Gate valves
_____ Pressure reducing valves (for individual water services)

F. Utilities
_____ Joint trench facilities (PG&E, Cable TV, Telephone)
_____ Street Lights
_____ Undergrounding of existing overhead utilities

G. Miscellaneous
_____ Monuments
_____ Masonry Wall
_____ Street trees (and tree wells)
_____ Median hard surfacing
_____ Public landscaping and irrigation
_____ Water meter development fee for public landscaping irrigation meter
_____ Street signs (stop, name, parking, traffic, etc.)
_____ Traffic signals
_____ Striping
_____ Signing
_____ Barricades
_____ Chain Link Fence

H. _____ 10% construction contingency on all construction

I _____ _____% increase for project inflation computed to the estimated end of construction. Factor is for a one-year period (based on the change in the E.N.R. San Francisco Construction Cost Index for the pervious calendar year). Note that this item is not included in the base for calculating plan check fees or inspection fees

J. _____ Bond enforcement costs calculated as the greater of _____ of the bond estimate. Note that this item is not included in the base for calculating plan check fees or inspection fees.

K. _____ _____ Construction engineering costs. If inspection fees are paid prior to City Council approval of the final map, construction engineering is calculated as only _____ Note that this item is not included in the base for calculating plan check fees or inspection fees.