



City of
Chino Hills

IMPROVEMENT PLAN SUBMITTAL APPLICATION

(This application must be provided at time of plan submittal)

Application Date:	_____	Received By:	_____
TDA Number: (Trust Deposit Account)	_____	Fee Collected:	_____
Project Name:	_____		
Project Description:	_____		
Project Location:	_____		
Tract Map:	_____	Parcel Map:	_____
Developer:	_____		
Contact Name:	_____	Phone & Fax:	_____
Street Address:	_____		
City:	_____	State:	_____ Zip: _____
Engineer:	_____		
Contact Name:	_____	Phone & Fax:	_____
Street Address:	_____		
City:	_____	State:	_____ Zip: _____

First Submittal Requirements:

- Plan Check Review Fee. – 3% of the Engineer’s Cost Estimate. (Must use City’s form)
- One (1) Copy - Engineer’s Cost Estimate. (Must use City’s form)
- One (1) Copy - Conditions of Approval.
- One (1) Copy - Approved Tentative Tract Map.
- One (1) Set - Plans for any adjacent improvements being joined.
- One (1) Copy – Hydrology and Hydraulic Calculations – Requires an initial deposit of \$1,750.00 + \$24/lot.
- One (1) Set – Traffic Signal Plans.
- One (1) Set – Signing and Striping Plans.
- Three (3) Sets – Sewer Improvement Plans.
- Three (3) Sets – Storm Drain Improvement Plans.
- Three (3) Sets – Street Improvement Plans.
- Four (4) Sets – Water Improvement Plans.

Plan Review Checklist:

Domestic Water

Plan Section

- ❑ Current City Title Block.
- ❑ Title block with “Water Improvement Plan and Profile” at top, street name and limits of construction.
- ❑ Signature block shall list company name, address, phone number, engineer name, RCE number and expiration date in the space provided in the title block.
- ❑ Plans have benchmark identified consistent with City benchmark log.
- ❑ Location map shown on title sheet. When plan set consists of more than three sheets, an index map shall be provided. (Minimum scale 1”=200’)
- ❑ Horizontal (1”=40’) and vertical (1”=4’) scales shall be used in plan and profile sheets unless otherwise approved by City Engineer.
- ❑ Provide matchline indicating station and adjacent sheet number in both plan and profile.
- ❑ Bearings on all streets shall be shown.
- ❑ Stationing shall be consistent with any existing approved plans on file with the City.
- ❑ Stationing and elevations shall be consistent on consecutive sheets.
- ❑ Stations shall be given for beginning and end of all improvements, tee’s, crosses, fire hydrants, blow-offs, air release valves, angle points, BC and EC of all curves.
- ❑ City standard general notes for water construction shall be on title sheet.
- ❑ North arrow shall be on each plan. Unless otherwise approved, north arrow shall point up or to the right.
- ❑ Existing topography shall be adequately shown on each sheet.
- ❑ Each plan and profile sheet shall have a lateral location table indicating design and “as-built” locations of all proposed water services.
- ❑ Show all existing and proposed water laterals in plan view.
- ❑ All existing utilities, structures, power poles, trees, fire hydrants that are within street right-of-way or adjacent to shall be shown on the plans.
- ❑ All existing and proposed utilities shall be shown on the plans, dimensioned and labeled with size.
- ❑ Horizontal curves may be used maintaining alignment with the street centerline. Curve radius shall be determined by amount of deflection allowed at joints by pipe manufacturer. Curved pipe not allowed.
- ❑ Show existing and proposed right-of-way and improvement widths. Shall match that shown on street improvement plans.
- ❑ Lot lines, frontage distances and lot numbers shall be shown and consistent with final map. Tract boundary lines shall be shown and labeled.
- ❑ Show all existing improvements with dashed or screened lines, label and dimension.
- ❑ Show details of all improvements not constructed per City standard drawing. Where standard is used, check standard drawing vs. what is shown.

- ❑ All mainline and fire hydrant valves shall be adjusted to grade per City standard drawing.
- ❑ Construction notes shown and number checked against improvements. List only construction notes used on each sheet.
- ❑ Estimate of quantities shown and correct.
- ❑ Correct street names shown on plans.
- ❑ Connections to existing water mains shall show drawing number, station, location and elevation per existing drawing.
- ❑ If water main is in an easement, show location and width of easement consistent with tract map or legal description. Water main shall be centered in a 20 foot wide easement unless otherwise approved by the City Engineer.
- ❑ Typical location of sewer shall be located seven (7') feet from the curb face on the south or west side of the street. Any deviation from this location must be approved by the City Engineer.
- ❑ Water mains shall be stationed based on the centerline of street. Stationing shall begin at the lowest end and increase upstream unless otherwise approved.
- ❑ Minimum separation between domestic water lines and sewer or recycled water shall be 10 feet horizontal.
- ❑ Water mains shall be a minimum diameter of 8-inches and in accordance with the City Water Master Plan.
- ❑ Mid-block valves shall be installed in mainlines with a spacing of no more than 1,000 feet between valves.
- ❑ There shall not be any dead end water lines with a length greater than 600 feet.
- ❑ Minimum separation between lateral corp stops shall be 2 feet.
- ❑ Valves shall be installed in each leg of a cross or tee.
- ❑ Fire hydrants shall be installed per City standard drawing. Spacing shall be 600 feet in single family residential and 300 feet in commercial, industrial and multi-family residential unless otherwise indicated by the Chino Valley Independent Fire District.
- ❑ Air release valves shall be installed per City standard drawings at all high points in the water main.
- ❑ Blow-off shall be installed per City standard at all low points in the water main. It is desirable that wherever possible, fire hydrants be located at low points to minimize the necessity of blow-off's.
- ❑ Water laterals shall conform to City Standard drawing.
- ❑ Under no circumstances shall a water main be allowed to pass under any structure.
- ❑ Water mains shall be constructed of C-900 C-905 PVC, (Class 235 Minimum) or cement mortar lined and coated steel pipe (10 ga. Minimum) per City Standard Specifications.

Profile Section:

- ❑ Horizontal and vertical scale shall be shown in the profile.
- ❑ Show 100 foot stations at the bottom of profile grid.
- ❑ Names and centerline stations shall be shown for all crossing streets.

- Label and show all existing water mains. Indicate existing size and elevation in parenthesis. Note shall indicate existing location and elevation shall be verified prior to construction.
- Show and label existing ground over centerline of water main.
- Show and label proposed finished surface over centerline of water main.
- Water main profile grades shall be correctly shown.
- Vertical curves shall not be used in water profiles. Grade breaks shall be labeled with station and elevation.
- Station and elevation shall be shown at the beginning and end of water improvements, at tee's and crosses, BC's and EC's, air valves and blow-off's.
- Length and type of pipe material shall be indicated on each sheet.
- All utility crossings shall be identified with elevation of existing utility and proposed water at crossing location.
- Check profile elevations on each sheet at match line to ensure consistency.
- Minimum cover for domestic water mains shall be 42" for 8" and smaller and 48" for 12" and larger.
- A minimum of one (1') foot vertical separation shall be maintained between domestic water mains and sewer or recycled water crossings. Domestic water main, laterals and services shall always cross over the top of sewer and/or reclaimed water.

Recycled Water

Plan Section:

- ❑ Current City Title Block.
- ❑ Title block with “Recycled Water Improvement Plan and Profile” at top, street name and limits of construction.
- ❑ Signature block shall list company name, address, phone number, engineer name, RCE number and expiration date in the space provided in the title block.
- ❑ Plans have benchmark identified consistent with City benchmark log.
- ❑ Location map shown on title sheet. When plan set consists of more than three sheets, an index map shall be provided. (Minimum scale 1”=200’)
- ❑ Horizontal (1”=40’) and vertical (1”=4’) scales shall be used in plan and profile sheets unless otherwise approved by City Engineer.
- ❑ Provide matchline indicating station and adjacent sheet number in both plan and profile.
- ❑ Bearings on all streets shall be shown.
- ❑ Stationing shall be consistent with any existing approved plans on file with the City.
- ❑ Stationing and elevations shall be consistent on consecutive sheets.
- ❑ Stations shall be given for beginning and end of all improvements, tee’s, crosses, fire hydrants, blow-offs, air release valves, angle points, BC and EC of all curves.
- ❑ City Standard general notes for recycled water construction shall be on title sheet.
- ❑ North arrow shall be on each plan. Unless otherwise approved, north arrow shall point up or to the right.
- ❑ Existing topography shall be adequately shown on each sheet.
- ❑ Each plan and profile sheet shall have a lateral location table indicating design and “as-built” locations of all proposed water services.
- ❑ Show all existing and proposed water laterals in plan view.
- ❑ All existing utilities, structures, power poles, trees, fire hydrants that are within street right-of-way or adjacent to shall be shown on the plans.
- ❑ All existing and proposed utilities shall be shown on the plans, dimensioned and labeled with size.
- ❑ Horizontal curves may be used maintaining alignment with the street centerline. Curve radius shall be determined by amount of deflection allowed at joints by pipe manufacturer. Curved pipe not allowed.
- ❑ Show existing and proposed right-of-way and improvement widths. Shall match that shown on street improvement plans.
- ❑ Lot lines, frontage distances and lot numbers shall be shown and consistent with final map. Tract boundary lines shall be shown and labeled.
- ❑ Show all existing improvements with dashed or screened lines, label and dimension.
- ❑ Show details of all improvements not constructed per City standard drawing. Where standard is used, check standard drawing vs. what is shown.
- ❑ All mainline valves shall be adjusted to grade per City standard drawing.

- ❑ Construction notes shown and number checked against improvements. List only construction notes used on each sheet.
- ❑ Estimate of quantities shown and correct.
- ❑ Correct street names shown on plans.
- ❑ Connections to existing recycled water mains shall show drawing number, station, location and elevation per existing drawing.
- ❑ If water main is in an easement, show location and width of easement consistent with tract map or legal description. Water main shall be centered in a 20 foot wide easement unless otherwise approved by the City Engineer.
- ❑ Typical location of recycled water shall be located seven (7') feet from the curb face on the north or east side of the street. Any deviation from this location must be approved by the City Engineer.
- ❑ Water mains shall be constructed of C-900 C-905 PVC, (Class 235 minimum) or cement mortar lined and coated steel pipe (10 ga. minimum) per City Standard Specifications.
- ❑ Water mains shall be stationed based on the centerline of street. Stationing shall begin at the lowest end and increase upstream unless otherwise approved.
- ❑ Minimum separation between recycled water and sewer shall be 5 feet horizontal and shall be 10 feet between recycled water and domestic water.
- ❑ Water mains shall be a minimum diameter of 4-inches and in accordance with the City Water Master Plan.
- ❑ Mid-block valves shall be installed in mainlines with a spacing of no more than 660 feet between valves.
- ❑ Minimum separation between lateral corp stop shall be 2 feet.
- ❑ Valves shall be installed in each leg of a cross or tee.
- ❑ Air release valves shall be installed per City standard drawings at all high points in the water main.
- ❑ Blow-off shall be installed per City standard drawing at all low points in the water main.
- ❑ Water laterals shall conform to City standard drawing.
- ❑ Under no circumstances shall a water main be allowed to pass under any structure.

Profile Section:

- ❑ Horizontal and vertical scale shall be shown in the profile.
- ❑ Show 100 foot stations at the bottom of profile grid.
- ❑ Names and centerline stations shall be shown for all crossing streets.
- ❑ Label and show all existing water mains. Indicate existing size and elevation in parenthesis. Note shall indicate existing location and elevation shall be verified prior to construction.
- ❑ Show and label existing ground over centerline of water main.
- ❑ Show and label proposed finished surface over centerline of water main.
- ❑ Water main profile grades shall be correctly shown.
- ❑ Vertical curves shall not be used in water profiles. Grade breaks shall be labeled with station and elevation.

- Station and elevation shall be shown at the beginning and end of water improvements, at tee's and crosses, BC's and EC's, air valves and blow-off's.
- Length and type of pipe material shall be indicated on each sheet.
- All utility crossings shall be identified with elevation of existing utility and proposed water at crossing location.
- Check profile elevations on each sheet at match line to ensure consistency
- Minimum cover for recycled water mains shall be 42" for 8" and smaller and 48" for 12" and larger.
- A minimum of one (1') foot vertical separation shall be maintained between domestic water mains and sewer or recycled water crossings. Domestic water main, laterals and services shall always cross over the top of sewer and/or reclaimed water. Vertical clearance between recycled water and sewer crossings may be less than one (1') foot where necessary.

Sewer

Plan Section:

- ❑ Current City Title Block.
- ❑ Title block with “Sewer Improvement Plan and Profile” at top, street name and limits of construction.
- ❑ Signature block shall list company name, address, phone number, engineer name, RCE number and expiration date in the space provided in the title block.
- ❑ Plans have benchmark identified consistent with City benchmark log.
- ❑ Location map shown on title sheet. When plan set consists of more than three sheets, an index map shall be provided. (Minimum scale 1”=200’)
- ❑ Horizontal (1”=40’) and vertical (1”=4’) scales shall be used in plan and profile sheets unless otherwise approved by City Engineer.
- ❑ Provide matchline indicating station and adjacent sheet number in both plan and profile.
- ❑ Bearings on all streets shall be shown.
- ❑ Stationing shall be consistent with any existing approved plans on file with the City.
- ❑ Stationing and elevations shall be consistent on consecutive sheets.
- ❑ Stations shall be given for centerline of manholes, beginning and end of all improvements, BC and EC of all curves.
- ❑ City Standard general notes for sewer construction shall be on the title sheet.
- ❑ North arrow shall be on each plan. Unless otherwise approved, north arrow shall point up or to the right.
- ❑ Existing topography shall be adequately shown on each sheet.
- ❑ Each plan and profile sheet shall have a lateral location table indicating design and “as-built” locations.
- ❑ Show all existing and proposed water laterals.
- ❑ All existing utilities, structures, power poles, trees, fire hydrants that are within street right-of-way or adjacent to shall be shown on the plans.
- ❑ All existing and proposed utilities shall be shown on the plans, dimensioned and labeled with size.
- ❑ Horizontal curves may be used with a minimum radius of 250 feet. Manholes shall be placed at either the beginning or ending of any curve and in no instance shall there be more than one curve between manholes.
- ❑ Show existing and proposed right-of-way and improvement widths. Shall match that shown on street improvement plans.
- ❑ Lot lines, frontage distances and lot numbers shall be shown and consistent with final map. Tract boundary lines shall be shown and labeled.
- ❑ Show all existing improvements with dashed or screened lines, label and dimension.
- ❑ Show details of all improvements not constructed per City standard drawing. Where standard is
- ❑ All manholes to be constructed shall have adjust to grade construction note.
- ❑ Construction notes shown and number checked against improvements. List only construction notes used on each sheet.

- ❑ Estimate of quantities shown and correct.
- ❑ Correct street names shown on plans.
- ❑ Connections to existing manholes shall show drawing number, station, location and elevation per existing drawing.
- ❑ If sewer is in an easement, show location and width of easement consistent with tract map or legal description. Sewer shall be centered in a 20 foot wide easement unless otherwise approved by the City Engineer.
- ❑ Typical location of sewer shall be located either 6' north or east of centerline. Any deviation from this location must be approved by the City Engineer.
- ❑ All sewer mains shall be Extra Strength Vitrified Clay Pipe (VCP) or SDR 35 PVC.
- ❑ Sewer mains shall be stationed based on the centerline of street. Stationing shall begin at the lowest end and increase upstream.
- ❑ Minimum separation between sewer and domestic water lines shall be 10 feet horizontal. Separation between 5 feet and 10 feet may be allowed with approval by the City Engineer.
- ❑ Sewer mains shall be a minimum diameter of 8-inches and in accordance with the City Sewer Master Plan.
- ❑ Laterals shall not be connected to sewer manholes unless approved by the City Engineer.
- ❑ Minimum separation between laterals shall be 2 feet.
- ❑ A manhole or cleanout is required at the terminal point of all sewers.
- ❑ Maximum spacing of manholes shall be 350' for mains between 8-inches and 18-inches and 450' for 21-inch mains and larger.
- ❑ Maximum distance between manhole and cleanout shall be 150 feet.
- ❑ Sewers shall be constructed to project boundaries within the public right-of-way.
- ❑ Sewer laterals shall conform to City standard drawings.
- ❑ When joining existing manhole, provide detail showing re-channeling of manhole base.
- ❑ Where a sewer lateral is the same size as the main, it shall be connected with a manhole.
- ❑ Under no circumstances shall a sewer main be allowed to pass under any structure.

Profile Section:

- ❑ Horizontal and vertical scale shall be shown in the profile.
- ❑ Show 100 foot stations at the bottom of profile grid.
- ❑ Names and centerline stations shall be shown for all crossing streets.
- ❑ Label and show all existing sewers. Indicate existing grade and elevation in parenthesis. Note shall indicate existing location and elevation shall be verified prior to construction.
- ❑ Show and label existing ground over centerline of sewer.
- ❑ Show and label proposed finished surface over centerline of sewer.
- ❑ Sewer profile grades shall be correctly shown.
- ❑ Vertical curves shall not be used in sewer profiles. A manhole shall be placed at all changes in vertical grade.

- Sewer manholes shall be stationed, labeled centerline manhole and have rim elevation indicated.
- Length and type of pipe material shall be indicated between each manhole.
- All utility crossings shall be identified with size and elevation of existing utility at proposed crossing location.
- Check profile elevations on each sheet at match line to ensure consistency.
- Minimum cover over mainline sewer shall not be less than 7 feet.
- Manholes shall have a minimum drop of 0.1' thru a straight manhole and 0.2' thru a bend manhole.
- Minimum profile slope shall be per City standards. See section 8-04.4 of City of Chino Hills Standard Specifications for Water/Wastewater Construction.
- A minimum of one (1') foot vertical separation shall be maintained between domestic water mains and sewer or recycled water crossings. Domestic water main, laterals and services shall always cross over the top of sewer and/or reclaimed water.

Storm Drain

Plan Section:

- ❑ Current City Title Block.
- ❑ Title block with “Storm Drain Improvement Plan and Profile” at top, street name and limits of construction.
- ❑ Signature block shall list company name, address, phone number, engineer name, RCE number and expiration date in the space provided in the title block.
- ❑ Plans have benchmark identified consistent with City benchmark log.
- ❑ Location map shown on title sheet. When plan set consists of more than three sheets, an index map shall be provided. (minimum scale 1”=200’)
- ❑ Horizontal (1”=40’) and vertical (1”=4’) scales shall be used in plan and profile sheets unless otherwise approved by City Engineer.
- ❑ Provide matchline indicating station and adjacent street number in both plan and profile.
- ❑ Bearings on all storm drain lines and streets shall be shown.
- ❑ Stationing shall be consistent with any existing approved plans on file with the City. Unless otherwise approved by the City Engineer, stationing on the plan sheet shall be set to increase from left to right.
- ❑ Stationing for storm drain lines shall be along the centerline of proposed storm drain. Equivalent street stations shall be given at all manholes, junctions, BC’s and EC’s.
- ❑ Stationing and elevations shall be consistent on consecutive sheets.
- ❑ Stations shall be given at the beginning and end of all improvements, manholes, junction structures, laterals, inlets, outlets, catch basins, BC’s and EC’s, etc.
- ❑ City standard general notes for storm drain construction shall be on title sheet.
- ❑ North arrow shall be on each plan. Unless otherwise approved, north arrow shall point up or to the right.
- ❑ Existing topography shall be adequately shown on each sheet.
- ❑ All existing utilities, structures, power poles, trees, fire hydrants that are within street right-of-way or adjacent to shall be shown, labeled and dimensioned on the plans.
- ❑ Local depression details shall be provided for each catch basin to be constructed. Detail shall be drawn at 1”=10’ and give size and elevation of all points of local depression.
- ❑ Curve data (delta, radius, length and tangent) shall be shown on each applicable sheet.
- ❑ Existing, proposed and future right-of-way and improvements shall be labeled and dimensioned.
- ❑ Lot lines, frontage distances and lot numbers shall be shown and consistent with final map. Tract boundary lines shall be shown and labeled.
- ❑ Existing improvements shall be shown a minimum of 300 feet beyond proposed improvements and shall be shown as dashed or phantom lines. Proposed improvements shall be shown as solid lines.
- ❑ All reference drawings used in the design of the improvement plans shall be listed in the title block.
- ❑ Show details of all improvements not constructed per City standard drawing. Where standard is used, check standard drawing vs. what is shown.

- ❑ Construction notes shown and number checked against improvements. List only construction notes used on each sheet.
- ❑ Estimate of quantities shown and correct.
- ❑ Correct street names shown on plans.
- ❑ If offsite grading is required for construction of the proposed improvements, it shall be indicated on the plans and a grading permission letter shall be obtained from the adjacent property owner.

Profile Section:

- ❑ Horizontal and vertical scale shall be shown in the profile.
- ❑ Show 100 foot stations at the bottom of profile grid.
- ❑ Names and centerline stations shall be shown for all crossing streets.
- ❑ Label and show all existing storm drains. Indicate existing grade and elevation in parenthesis. Note shall indicate existing location and elevation shall be verified prior to construction.
- ❑ Show and label existing ground over centerline of storm drain.
- ❑ Show and label proposed finished surface over centerline of storm drain.
- ❑ Storm drain profile grades shall be correctly shown.
- ❑ Vertical curves shall not be used in storm drain profiles. A manhole shall be placed at all changes in vertical grade. A concrete collar may be used if approved by the City Engineer.
- ❑ Storm drain manholes shall be stationed, labeled centerline manhole and have rim elevation indicated.
- ❑ Storm drain junctions shall be stationed, labeled with type of junction, and have rim elevation indicated as applicable.
- ❑ Beginning and end of pipe shall be identified with station and elevation at beginning of pipe, at each manhole and at end of pipe.
- ❑ Length, type of pipe material and design 'Q' shall be given for each pipe reach.
- ❑ All utility crossings shall be identified with size and elevation of existing utility at proposed crossing location.
- ❑ Check profile elevations on each sheet at match line to ensure consistency.
- ❑ Hydraulic grade line for Q-100 shall be shown and identified for each pipe reach.

Street

Plan Section:

- ❑ Current City Title Block.
- ❑ Title block with "Street Improvement Plan and Profile" at top, street name and limits of construction.
- ❑ Signature block shall list company name, address, phone number, engineer name, RCE seal, number and expiration date in the space provided in the title block.
- ❑ Plans have benchmark identified consistent with City benchmark log.
- ❑ Location map shown on title sheet. When plan set consists of more than three sheets, an index map shall be provided. (Minimum scale 1"=200')
- ❑ Horizontal (1"=40') and vertical (1"=4') scales shall be used in plan and profile sheets unless otherwise approved by City Engineer.
- ❑ Provide matchline indicating station and adjacent sheet number in both plan and profile.
- ❑ Bearings on all streets shall be shown.
- ❑ Stationing shall be consistent with any existing approved plans on file with the City. Unless otherwise approved by the City Engineer, stationing on the plan sheet shall be set to increase from left to right.
- ❑ Stationing and elevations shall be consistent on consecutive sheets.
- ❑ Stations shall be given for BCR's and ECR's, BC and EC of all horizontal curves.

- ❑ Stations shall be given at the beginning and end of all improvements, centerline of drive approaches, catch basins, under sidewalk drains, streetlights, fire hydrants, etc.
- ❑ Curve data shall be given for all horizontal curves.
- ❑ City Standard general notes for street construction shall be on title sheet.
- ❑ North arrow shall be on each plan. Unless otherwise approved, north arrow shall point up or to the right.
- ❑ Existing topography shall be adequately shown on each sheet.
- ❑ Curb returns shall have a minimum radius of 25 feet for local and collector intersections and 35 feet for Arterial Intersections. A curb return radius of 50 feet may be required at intersections where truck usage is heavy, as required by the City Engineer.
- ❑ Wheelchair access ramps shall be installed at all curb returns per City Standard No. 108.
- ❑ Curb return data (delta, radius, length and tangent) shall be shown on each applicable sheet.
- ❑ All existing utilities, structures, power poles, trees, fire hydrants that are within street right-of-way or adjacent to shall be shown, labeled and dimensioned on the plans.
- ❑ Existing, proposed and future right-of-way and improvements shall be labeled and dimensioned.
- ❑ Lot lines, frontage distances and lot numbers shall be shown and consistent with final map. Tract boundary lines shall be shown and labeled.
- ❑ Existing improvements shall be shown a minimum of 300 feet beyond proposed improvements and shall be shown as dashed or phantom lines. Proposed improvements shall be shown as solid lines.
- ❑ All reference drawings used in the design of the improvement plans shall be listed in the title block.
- ❑ Show details of all improvements not constructed per City standard drawing. Where standard is used, check standard drawing vs. what is shown.
- ❑ All water valves and manholes shall have adjust to grade construction note.

- ❑ Estimate of quantities shown and correct.
- ❑ Street trees shall be installed per City landscape requirements.
- ❑ Construction notes shown and number checked against improvements. List only construction notes used on each sheet.
- ❑ Show existing streetlights with stations within 300 feet of project.
- ❑ Proposed streetlights shall be installed per City Standard drawing.
- ❑ Streetlights shall be placed at ECR's and on lot lines wherever possible. Streetlights shall be at least five (5') feet from fire hydrants.
- ❑ Typical cross sections shall be shown for each street, drawn to scale, and shall be in accordance with City Standard Drawings. Sections shall include existing and proposed improvements, constructions notes, level line, cross slope of pavement and the Traffic Index (TI).
- ❑ Cross slopes shall be 2% for all new street construction. When improving existing streets cross slope may vary from 2% min. to 4% max.
- ❑ Show flowline elevations on all BCR's and ECR's and on the flowline of cross-gutters.
- ❑ Show TC and FL elevations at end of all improvements. Existing elevations to be shown in parenthesis.
- ❑ Where joining existing pavement, a minimum of 5 foot wide and 0.15 feet thick grind and AC overlay shall be constructed.
- ❑ Limits of all AC pavement and curb and gutter removals shall be clearly defined and stationed on the plans.
- ❑ Pavement transitions shall be a minimum of 3:1 and 5:1 in the direction of travel, respectively. Transitions used on major streets may require additional length. Type "L" markers shall be installed at 10 foot spacing along the taper.
- ❑ Show existing or proposed drainage flows coming into or out of proposed improvements and details of how these flows are transitioned.
- ❑ 2"x6" redwood headers are required along the edge of all proposed AC pavement.

- ❑ Street name signs shall be installed at each intersection. Stop signs and stop bars shall be installed per Caltrans standard at those intersections determined by the Engineering Department.
- ❑ If offsite grading is required for construction of the proposed improvements it shall be indicated on the plans and a grading permission letter shall be obtained from the adjacent property owner.
- ❑ Minimum centerline radius shall be 300 foot for local streets (25 mph design) and 600 foot for secondary highways (45 mph design). Radius' for major highways and arterials shall be based on design speed considerations and the design charts set forth in the Caltrans "Highway Design Manual."
- ❑ Final street structural sections shall be determined by a soils test following completion of rough grading and shall conform to the minimum requirements as indicated per City Standard drawing.
- ❑ PCC curb and gutter and sidewalk shall be installed per City Standard drawing.

Profile Section:

- ❑ Horizontal and vertical scale shall be shown in the profile.
- ❑ Show 100-foot stations at the bottom of profile grid.
- ❑ Names and centerline stations shall be shown for all crossing streets.

- ❑ Label and show stations and elevations at the beginning and end of all curb returns, vertical curves, horizontal curves, transitions, grade breaks, and beginning and end of improvements. Denote existing elevations in parenthesis.
- ❑ Show and label existing ground profile at centerline. Flag existing elevations at 100-foot intervals.
- ❑ Show and label existing ground profile at right-of-way or existing TC profile as appropriate. Existing TC shall have elevation flags at 100-foot intervals.
- ❑ For pavement match-up situations, show existing edge of pavement elevations at 50-foot intervals.
- ❑ Profile and grades shall be shown for proposed centerline finish surface. Station and elevation shall be shown at 100-foot intervals.
- ❑ Profile and grades shall be shown for proposed top of curb (TC). Station and elevation shall be shown at 100-foot intervals.
- ❑ Extend all profiles a minimum of 300 feet beyond project limits. If existing curb is within 500 feet of proposed improvements, profile shall be extended to verify matching of grades.
- ❑ Where proposed improvements only require edge of pavement to be constructed, future TC profile shall be shown on the plans and labeled as such.
- ❑ Top of curb and flowline elevations shall be shown at all join locations.
- ❑ Show connection of proposed design to existing improvements. Existing elevations and grades shall be shown.
- ❑ Length of curb return shall be shown with elevations at $\frac{1}{4}$ delta points.
- ❑ If curb height is variable at the return, $\frac{1}{4}$ delta points shall include both TC and FL elevations.
- ❑ The minimum centerline grade shall be 0.50%. Maximum centerline grade shall be as shown in the City Standard drawings for Road Improvements.
- ❑ Maximum grade break allowed is 0.50% without using a vertical curve. A 1.0% grade break is acceptable at curb returns.
- ❑ Minimum length of vertical curve shall be 50 feet. Length shall be designed per Caltrans Highway Design Manual for the rated speed of the street.
- ❑ Tangent grades and P.I. elevations shall be given for all vertical curves.
- ❑ Curb profiles shall mirror that given for the centerline based on the typical cross section for the proposed street.
- ❑ Vertical curves shall be labeled with station and elevation at a maximum interval of 25 feet.