



City of Victorville

Department of Public Works

Engineering ♦ Public Works ♦ Utilities ♦ Water

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Minimum Requirements for Street Improvement Plans

GENERAL REQUIREMENTS

- The improvement plan submission must be accompanied with a previously approved Hydrology Study, based on San Bernardino County method of calculations for 25 year and 100 year storms including both on-site and off-site runoff (assume ultimate upstream development) with special attention to concentrated flows received by and exiting the project. Said hydrology study is to be wet stamped and signed by the preparing engineer.
- Geotechnical/Soils Report is required for grading and street improvements as specified in the City Standard Specification for Public Improvements.
- Engineer's estimate of construction costs for the proposed improvements (based on prevailing wage).
- 3 sets of check prints and one digital pdf copy
- Erosion Control Plans may be included with and as a part of the Grading Plan.
- Sheet size to be 24"x36" (no exceptions).
- All notes and dimensions are orientated as to be read from the bottom or right side of the sheet.
- Plan and profile views are required for all utility and street improvement plans, cross sections may be required for grading plans.
- Plans to be drawn to standard engineering scale with the scale shown on each sheet. Horizontal scale of scale of 1"=40' is the smallest scale size allowed. Vertical scale is to be 10 times the horizontal scale unless approved by Engineering Department.
- North arrow preferably pointing towards the top or left side of sheets.
- Stationing is preferred to be from left to right.
- Street names shown on each sheet and are to match.
- All sheets to be wet stamped, signed and dated by the preparing engineer.
- Adjoining sheets must be identified and referenced by match lines, design elevation and station.
- Plan must be based on an approved City of Victorville bench mark, located on plan or vicinity map, described and elevation given. Any onsite construction bench mark (based on the city bench mark) to be used must be also identified.
- Show legal description for property involved.
- Identify the Assessor's parcel number for property(ies) along the improvements.
- Across the bottom of each sheet include the following from right to left:
 - Block for sheet number and total number of sheets.
 - Title Block including text "In The City of Victorville, CA", the tract map or other title of development, type of construction (street, storm drain, sewer, water, grading or erosion control plan), and limits of construction including stationing(if applicable).
 - City of Victorville Engineering Department Approval block with current consulting engineer's name, date, license number and expiration date.
 - Revision block.
 - Name, address and phone number of company that submitted the plans, initials of company designer and checker.
 - Signature Block for designing engineer that prepared the plans with name, date, license number and expiration date.
 - Seal of the responsible Registered Engineer that plans were prepared by or under the direction of.(may be placed above designing engineer's block)
 - Developer's name/company, address and telephone number.
- Show, drawn to scale, and identify all improvements (existing, proposed and future). Existing improvements are to be shown by dashed lines, proposed improvements by solid lines and future improvements by broken lines. All lines and symbols in plan and profile views shall be identified by label or by definition in a legend.

- All abbreviations and acronyms used shall be defined.
- Show existing elevations and slopes in parenthesis where proposed data is shown.
- City approved General Notes shall be shown on the Title Sheet. See attached minimum requirements of general notes specific to improvement plans submitted.
- Vicinity map, index map of and index of drawings on Title Sheet.
- Specific construction notes must reference to approved City, County, State, APWA standards or other professional standards or must be detailed on the plan. Details other said approved standards must include the designing engineer's seal and signature(if other than the plan engineer, structural,
- Plan must be in compliance all conditions of approval requirements or approved alterations for the subdivision map or permit. Include a list by reference number to all that apply placed in the lower right hand corner of each sheet.
- Private engineer/developer is responsible for any and all coordination and approval(s) with San Bernardino County Flood Control District, State of California, Caltrans or any other governmental organization whose authorization and or approval is required.
- Design requirements are subject to the City Standard Specifications for Public Improvements and City Municipal Code.
- Improvements and elevations shown must match other improvement plans for project.
- Bearings and distances along centerlines shall match the approved (recorded) tract map.
- Street names shall match the approved (recorded) tract map and be shown on each sheet.
- Lot lines and lot numbers shall match the approved (recorded) map.
- All easements within and that may impact the project must be shown.
- All natural and improved drainage courses within and that may impact the project must be shown.
- All utilities (above and underground), irrigation lines, power poles, trees and other structures that may conflict with the construction of improvements shall be identified and located with station and distance from street centerline. The proposed disposition of the structure shall be indicated (whether to remain protected in place or relocated).
- All design improvements shall be fully controlled and dimensioned to accommodate construction staking.
- All lines in plan and profile views shall be identified by label or by line type definition in a legend.
- All proposed structures shall be drawn to scale and detail(s) provided for clarity where needed.
- The elevation lines of the profile grid shall be labeled every 10 feet, the stationing lines of the profile shall be labeled every 100'.
- Elevations shown on the plan and profile views must match.
- Profile stationing shall align with plan view stationing where possible.
- The calculated grade of all improvement profile lines shall be indicated.
- The beginning and end of construction shall be identified, stationed and existing and proposed elevations shown on the plan and profile views.
- The grades of existing improvements connecting to the proposed improvements shall be shown on the profile view.
- The grades of future improvements connecting to the proposed improvements shall be shown and the plan from which the data came from provided.
- Match point elevations and stations from one sheet to the other shall match.
- Stationing typically will be along street centerline, matching street improvement plans, and the station labeled every 100'. Dimensions from proposed pipelines to street centerline shall be shown. In the event pipeline length and differs from street centerline length, (due to curves or non-parallel alignments, ect.) pipeline curve data, length and bearing shall be added along the pipeline and the relationship between stationing noted. Difference in stationing will be made up with a pipeline equation station.

DESIGN REQUIREMENTS FOR STREET IMPROVEMENT PLANS (minimum)

- Existing street improvement conditions shall be shown 300' minimum extending beyond project boundaries. A conceptual improvement design extending 300' beyond project boundary to show impact and how the proposed project design will match existing conditions is required for unimproved conditions bordering the project. The conceptual design shall include cross sections at 50' intervals.
- Typical street sections shall be in conformance with City Standard Specifications for Public Improvements drawings S-18, S-21 and S-24(if applicable) and/or as specified in the project conditions of approval.
 - Cross slope section shall be 2.00% street centerline or centerline of improvements to gutter lip (if applicable).
 - The typical section shall show all proposed improvements (pavement, base, subgrade, curb & gutter, parkway and slope to right-of-way line).
 - Base is to extend under curb & gutter.
 - The traffic index for each section shall be shown.
- Alignment tapers and transitions must be shown, with existing and finish grade elevations.
 - Taper of 10:1 minimum for widening and 20:1 minimum for narrowing is required for local streets.
 - Taper minimum for narrowing on all other streets is as set per Caltrans design manual based on street design speed.
- Minimum centerline radius unless previously approved by City Engineer is as follows:
 - 300' for local streets
 - 600' for collector streets
- Cul-de-sac design shall be per City Std. S-26.
- Curb return radius shall match right-of-way radius at intersections.
- The profile view shall show finish elevations of the centerline and top of curb or edge of pavement as applicable.
- The top of curb and flow line elevations shall be given for all variable and atypical curb heights.
- Curb type transition areas shall be identified along with stations and elevations of the beginning and end of transitions. Transition areas are preferred within curb returns.
- Stationing and elevations for beginning, point of reverse curvature and end of all curves and curb returns must be given as well as the curve data (Radius, Delta, Length & Tangent).
- The minimum grade away from lip of gutter through curb returns shall be 0.40%.
- Top of curb and flow line elevations shall be calculated and shown for $\frac{1}{4}$, $\frac{1}{2}$ & $\frac{3}{4}$ deltas of curb returns.
- The beginning, end, high and low points of all vertical curves shall be given along with sufficient information to calculate any point on the curve (the station and elevation for the P.I., B.V.C. & E.V.C. along with the tangent grades in and out as a minimum).
- The sight distances for the design of vertical curves shall conform to Caltrans design criteria as follows:
 - Local streets – 30 mph
 - Collectors – 45 mph
 - Arterials – 50 mph
 - Super arterials – 55 mph
- The elevations for all grade breaks shall be given. Vertical curves shall be used for grade breaks of 0.50% and greater.
- Dimension for curbs shall be to face of curb on the plan view.
- Curb & gutter shall be per City Standard S-01. Curb only constructions shall be per City Standard S-09.
- Residential driveways shall be per City Standard S-02.
- Commercial driveways shall be per City Standard S-03.
- Residential sidewalks are to be 6' wide and commercial sidewalks are to 10' wide, both as measured from the face of curb to back of sidewalk. Typical sidewalk section shall be per City Standard S-04.
- Existing and proposed street lights must be shown. Spacing intervals shall be 250' minimum, 300' maximum and staggered/alternating from side to side of street.
- Top of curb grade for curb inlets and outlets shall be straight. Flow line grade may vary to accommodate the structure design.
- New pavement and overlay must be delineated with unique hatching or shading. Existing pavement saw cut lines and removal must be clearly indicated.

- Saw cut and removal lines are to be parallel or perpendicular to traffic direction (no angled joints).
- Cross gutters shall be per City Standard S-05 and:
 - Shall be 10' wide if accommodating an upstream area of 1,000 feet or more.
 - Not permitted in mid block or at knuckles.
 - Not permitted on arterial streets.
 - Not permitted if there is a storm drain that can be connected to.
 - Shall be straight grade. Flow line elevations must be shown in profile view.
- Dead end streets and intersections for future streets shall be barricaded in conformance with City Standard S-06.
- Underground utility construction shall extend beyond the limits of street improvements (new pavement will not be cut or removed for a minimum of 3 years). Any underground construction that may conflict with design or construction of new improvements shall be identified and located exactly. The proposed resolution of conflict shall be approved by the owner of the utility or structure and designed with sufficient cover.
- All manhole covers and valve can lids shall be raised or lowered to finish grade and noted.
- Ramps for the handicapped shall be per Caltrans Standard A88A (normally case A) with raised truncated dome dots blue in color.
- The limits of grading or construction activities along improvements must be shown. If limits encroach onto adjacent properties, a letter granting permission or an easement for encroachment must be obtained by the developer and a copy filed with the City.
- Minimum grade along all streets is 0.40%. Maximum grade is 10.00% for local streets and 7.00% for collector streets and greater.
- Where "Grade to Drain" notes are indicated, sufficient design, elevations and topography information must be shown to insure this can be accomplished.
- Where conflicts with existing underground utilities and structures are possible, a note requiring the construction contractor to verify exact location of conflicting utility point prior to beginning of construction will be added.

STREET PLAN GENERAL NOTES (minimum)

1. These improvement plans are based on City of Victorville Bench Mark V-*insert number*, being a *insert physical description*, located at *insert location*, having an elevation of *insert elevation from City Datum*.

Where an onsite construction bench mark is also used, add similar data.
2. Unless otherwise noted, all construction and materials shall conform to these plans, provisions of the latest revision of the City of Victorville Standard Specifications for Public Works Construction, and policies and applicable provisions of the City of Victorville Engineering Department.
3. Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continually and not be limited to normal working hours; and that the contractor shall defend, indemnify and hold the owner, the engineer, and the City harmless from any and all liability, real or alleged, in connection with the performance of work on this project.
4. It shall be the contractor's responsibility to obtain any permits required by the City of Victorville Engineering Department in order to do the work shown on these plans.
5. The contractor shall give the City of Victorville Engineering Department (760) 955-5158 at least 2 working days notice to schedule a pre-construction meeting with the inspector prior to start of work.
6. The contractor shall notify the City of Victorville Engineering Department at least 1 working day prior to necessary inspections at. A re-inspection fee will be rendered on each occasion when the contractor is not ready for the inspection at the scheduled time. No further inspections will be performed until said re-inspection fee is paid.
7. The contractor shall notify Underground Service Alert 2 working days in advance of excavation at 1-800-422-4133 for exact utility locations.
8. It shall be the contractor's responsibility to familiarize him/her self with site conditions and of any underground utilities shown or not shown on these plans.

9. Existing utilities shall be maintained in operation during construction.
10. All pipelines, substructures, or utilities of any kind, whether shown on these plans or not, shall be protected in place or, if required, be removed, relocated, or reinforced to the satisfaction of the City Engineer and the Company owning the facility at the expense of the contractor.
11. Any relocation of existing mail boxes, power poles, street lights, fire hydrants, sign posts, telephone pedestals, etc., shall be relocated or removed and reinstalled by and at the expense of the contractor.
12. It shall be the contractor's responsibility to protect surveying monuments in place and the contractor shall be financially responsible for resetting damaged or destroyed monuments.
13. Joshua trees shall be protected in place or relocated as approved by the Parks Division of the City of Victorville Department of Community Services at the contractor's expense.
14. Adequate stakes, as determined by the City Engineer, enabling the contractor to construct the work to plan and grade shall be set by the direction of the contractor's licensed engineer or surveyor.
15. The contractor shall be held responsible for any field changes made without prior written authorization from the designing engineer and the City of Victorville Engineer.
16. Contractor will be supplied with one (1) set of contract drawings to be used for as-built drawings. The contractor shall update the as-built drawings daily. The contractor shall make the as-built drawings available to the owner, engineer, or inspector upon request. The as-built drawings shall include the stations of all connections, tees, and laterals.
17. All excavations shall be backfilled at the end of each working day and roads made safe and open to vehicular traffic.
18. The contractor shall be responsible for providing testing required by the City's Inspector and The City of Victorville Standard for Public Works Improvements. A certification of compaction signed by a registered Engineer shall be submitted for all trench backfills.
19. If base is required, the thickness shall be determined on the results of the geotechnical/soils report for this project. Minimum base thickness shall be 8", minimum R Value of 70 and minimum sand equivalent of 25. Traffic Index Values can be obtained from the City Engineering Department. All street pavement sections must be approved by the City Engineer prior to commencement of construction. Select native material may be used as base if previously approved by the City Engineer.
20. Maximum driveway widths are 12' for a single car garage, 18' for a two car garage and 24' for a 3 car garage. Driveway shall align with garage door(s) or carport and be perpendicular to curb.
21. If improvements of asphalt or Portland cement is to be placed directly on subsurface, a soil sterilant registered by the EPA for use under asphalt or Portland cement shall be uniformly applied per manufacturer's recommended rate for the entire surface in contact subsurface(full pavement width) prior to paving.
22. All new AC pavements shall be seal coated as determined by the City Engineer per City of Victorville Standard Specifications or California Department of Transportation Standard Specifications.
23. Construction traffic control and temporary striping and signing plans shall be prepared by the contractor's engineer and be approved by the City Engineer prior to commencement of construction. These plans are required for construction by plans and construction work on existing streets.
24. Final striping and traffic control sign plans shall be prepared by the developer's engineer and be approved by the City Engineer. Striping and pavement markings shall be furnished by the contractor. All street markings, lane lines, legends, limit lines, etc., on full street improvements, shall be thermoplastic on final cap. Painted striping and markings may be permitted if previously approved by the City Engineer, on partial street improvements that are not completing the street to full improvements.
25. Street name signs and traffic control signs shall be installed by the City of Victorville at the expense of the contractor.
26. All fire hydrant locations shall be delineated by a blue dot in the pavement located on a line perpendicular to the curb and at the center of the fire hydrant approximately 1' from the left side of the number 1 lane (lane closest to the center line) on the side of the street on which the fire hydrant is located.

27. The top of curb shall be painted red 15 feet either side of a fire hydrant red (no parking). The curb in a curb return or a driveway approach need not be painted.
28. The contractor shall clean the streets prior to occupancy and shall keep the streets clean until they are accepted by the City of Victorville.