



City of Victorville
Department of Development
Planning ♦ Building ♦ Code Enforcement

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Minimum Requirements for Improvement Plans

TABLE OF CONTENTS

GENERAL REQUIREMENTS (ALL IMPROVEMENT PLANS)2

STREET IMPROVEMENT PLANS.....4
 DESIGN REQUIREMENTS (minimum)4
 STREET IMPROVEMENTS GENERAL NOTES (minimum)5

STORM DRAIN IMPROVEMENT PLAN8
 DESIGN REQUIREMENTS (minimum)8
 STORM DRAIN IMPROVEMENTS GENERAL NOTES (minimum)8

GRADING IMPROVEMENT PLAN.....10
 DESIGN REQUIREMENTS (minimum)10
 GRADING IMPROVEMENTS GENERAL NOTES (minimum)11

EROSION CONTROL PLAN13
 DESIGN REQUIREMENTS (minimum)13
 EROSION CONTROL GENERAL NOTES (minimum)13

SEWER IMPROVEMENT PLANS16
 DESIGN REQUIREMENTS (minimum)16
 SEWER IMPROVEMENTS GENERAL NOTES (minimum)17

GENERAL REQUIREMENTS (ALL IMPROVEMENT PLANS)

- Street, Storm Drain and Grading Improvement Plan submissions 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 1"=40' is the smallest scale size allowed. Vertical scale is to be 10 times the horizontal scale unless approved by Development 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 Development Department Approval block with current development departments 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, 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.
- 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 IMPROVEMENT PLANS

DESIGN REQUIREMENTS (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.
- Complete cross sections at 50' intervals (25' along vertical curves) must be included with the plan as reference sheets. The cross sections shall show how the proposed improvements will join existing, including grades and elevations.
- 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 curb face radius shall be 43', right-of-way line radius shall be 50'.
- 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 City Standard S-11A.
- 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.

STREET IMPROVEMENTS 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 (760) 955-5158. 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.

Note: Where **contractor** appears in the above notes, owner, developer or engineer may be substituted as appropriate.

STORM DRAIN IMPROVEMENT PLAN

DESIGN REQUIREMENTS (minimum)

- All public storm drain pipes shall be 2000D RCP or cast in place.
- Manholes will be stationed and distances between manholes given.
- Distance between manholes shall not exceed 400'.
- All laterals shall be shown and stationed at the connection point.
- Where connection to existing storm drain is designed, a note requiring the construction contractor to verify exact location of connection point (horizontally and vertically) prior to beginning of construction will be added.
- 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.
- Utilities crossing the storm drain must be shown in both plan and profile views. All underground structures and utilities that may conflict or impact the proposed construction must be shown including exact location (if it can be determined) and proposed relocation. (if required) The minimum separation between such utilities shall be given. The profile view shall also show the elevations for the storm drain and the crossing utility at the closest point where they cross.
- All storm drain extensions for future connections shall be constructed beyond the limits of street improvements. (new pavement will not be cut or removed within 3 years)
- Each manhole shall be uniquely numbered and the station indicated.
- Where there is a change in diameter of storm drain pipe, the soffits shall align.
- The Hydraulic Grade Line for both 25 year and 100 year storms must be shown.
- The "Q" and "V" for each section of storm drain must be shown on the profile view.
- Grade breaks between manholes is not allowed.
- Existing and proposed grade over the storm drain pipe must be shown in the profile view. Additional structural reinforcing will be required if cover over pipe is less than manufacturer's minimum
- The elevation of the pipe invert entering and exiting the manhole shall be shown on the profile view.
- The finish surface of the manhole rim shall be given.
- The grade and distance of the pipeline between manholes shall be given on the profile view.
- The size and class of pipe constructed shall be indicated on both profile and plan views.

STORM DRAIN IMPROVEMENTS GENERAL NOTES (minimum)

1. Unless otherwise noted, all construction and materials shall conform to the applicable provisions of the latest revision of the City of Victorville Standard Specifications for Public Works Construction, and Standard Drawings on file with the City of Victorville.
2. **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 excepting for liability arising from the sole negligence of the owner or the engineer.
3. 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.
4. 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.
5. 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.

6. The **contractor** shall notify Underground Service Alert 2 working days in advance of excavation at 1-800-422-4133 for exact utility locations.
7. It shall be the **contractor's** responsibility to familiarize himself/herself with site conditions and of any underground utilities shown or not shown on these plans
8. Existing utilities shall be maintained in operation during construction.
9. 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**.
10. 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**.
11. 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.
12. 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.
13. 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.
14. 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.
15. **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.
16. All excavations shall be backfilled at the end of each working day and roads made safe and open to vehicular traffic.
17. The **contractor** shall be responsible for providing testing required by the City's Inspector and trench backfill compaction testing. A certification of compaction signed by a registered Engineer shall be submitted for all trench backfills.
18. Stations shown on profile are on centerline of the conduit, unless otherwise indicated.
19. Manhole rim elevations shall be staked in the field at time of construction.
20. Manhole cover shall be installed with hold-down bolts.
21. If Asphalt or Portland cement drainage structure 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 with the structure.

Note: Where **contractor** appears in the above notes, owner, developer or engineer may be substituted as appropriate.

GRADING IMPROVEMENT PLAN

DESIGN REQUIREMENTS (minimum)

- Design requirements are subject to the City Standard Specifications for Public Improvements and City Municipal Code.
- Improvements and elevations shown must match other plans for project.
- Bearings and distances along centerlines shall match the approved (recorded) tract map.
- All street names shall match the approved (recorded) tract map.
- All lot lines and lot numbers shall match the approved (recorded) map.
- Show all easements and natural drainage courses.
- All improvements on site and within street right-of-way shall be fully controlled and dimensioned to accommodate construction staking.
- All structures shall be drawn to scale and detail(s) provided for clarity where needed.
- Street centerline station and finish surface elevation for beginning & end of curves, points of reverse curvature (horizontal and vertical), grade breaks, low points & high points of vertical curves and beginning & end of construction and other design key points.
- Curb & gutter station and elevation of top & flowline for all beginning & end of curves, points of reverse curvature including the curb returns at intersections, change in direction, grade breaks, at the extension of property side lines, at beginning & end of construction and other design key points.
- Flowline elevations of cross gutters shall be shown.
- Station, existing elevation and proposed finish surface must be shown at construction match points.
- Station and elevation must be shown at grade breaks and key design points.
- Finish grade elevations at property corners, building corners, concrete corners and drainage design points must be shown.
- Existing elevation contours (typically 2' maximum interval) and topography mapping extending 100 feet minimum beyond project limits or further if design impacts are a concern.
- Maximum design slope is 2:1 unless previously approved by Development Department. Cut and fill slopes are to be lightly shaded.
- Parkway slopes shall fall towards top of street curb at 2.00% (no exceptions)
- Minimum flow grade shall be 1.00% except for smooth concrete which will be 0.50%.
- Direction and gradient of all flow lines and sheet flows.
- All designed structures draw to scale or on detail drawing.
- Maximum grade for handicap parking is 2.00 % in any direction or as allowed by current ADA Design Standards City, or Caltrans whichever is most stringent.
- Maximum grade for handicap ramps shall be 8.33% along run and 2.00% cross slope.
- Driveway grade shall not exceed 12.00%.
- Building pad and finish floor elevations must be shown for each lot. (finish floor must be 0.50' higher than building pad and building pad must be at least 0.30' higher than adjacent flowlines)
- Area within 5' of commercial doorways shall be of 0.50% maximum grade away. All other onsite walkways shall be no more than 6.60% on run and a maximum cross grade of 2.00%.
- All underground structures and utilities that may conflict or impact the proposed grading must be shown including exact location (if it can be determined) and proposed relocation. (if required)
- Any utility vaults, manholes, clean-outs, valve cans and other structures that must be adjusted to grade must be noted.
- Grading/improvement limits must be shown. If limits encroach onto adjacent property, letter(s) of permission or agreement must be obtained from the property owner(s).
- "Grade to drain" design situations must show sufficient existing conditions, finish elevations and control to provide direction on how it will be accomplished.
- The Index Map shall include direction of water flow around and through the project.
- Drainage crossing sidewalks to the street, drainage easement, or natural drainage course shall be conveyed through 4" pvc drainpipe other structure, under sidewalk through the face of curb, except in single family residential developments.

- Show where incoming water runoff enters project and address control of runoff through project.
- Show where water is leaving the site and how it will be returned to its natural drainage course.
- All slopes shall have the following setbacks from structures or property lines and shall also conform with Section 15.06 of the City of Victorville Municipal Code:
 - Top of slope shall be set back from the property line or right-of-way line 0' for a vertical slope height of 3' or less, 2' for a vertical height of up to 10' but higher than 3' and one-fifth (1/5) of the vertical height for vertical heights in excess of 10'.
 - Top of slope shall be setback from face of footing of structure by one-third (1/3) of the vertical height of the slope but need not exceed 40'.
 - Bottom of slope shall be setback from the property line or right-of-way line by one-half (1/2) of the vertical height of the slope with a 2 foot minimum and a 20 foot maximum setback.
 - Bottom of slope shall be set back from face of structure one-half (1/2) of the vertical height of the slopes.
 - Building footprint shall be shown and dimensioned to beginning of slopes, property lines and other key structures/improvements.
- Existing and proposed pavement limits shall be identified with shading, hatching or other acceptable clearly defined drafting method.
- All proposed and existing above ground utility structures including street lights shall be shown in order to determine possible conflicts.
- Street lighting may be shown on the grading plan for Commercial projects
- Subdivisions shall require a separate street lighting plan.
- An 8'-9" x 10'-8" 4" thick PCC slab at 0.50% maximum run grade shall be constructed in front of all trash enclosures.
- A 6" high PCC curb shall be required along the back of street sidewalks where the adjacent landscape area is planted with vegetation other than sod.

GRADING IMPROVEMENTS GENERAL NOTES (minimum)

1. Grading shall conform to Article 2 of Chapter 5 of Title 16 of the City of Victorville Municipal Code.
2. A Grading Permit shall be obtained from the City of Victorville Building Department prior to the start of grading work.
3. **Contractor** shall give the City of Victorville Building Department at least 2 working days notice to schedule a pre-construction meeting with the inspector prior to the start of work.
4. The **contractor** shall notify Underground Service Alert at 1 (800) 422-4133 at least 2 working days in advance of starting work.
5. It shall be the **contractor's** responsibility to familiarize himself/herself with site conditions and of any underground utilities shown or not shown on these plans.
6. The **contractor** shall give the City of Victorville Building Department at least 1 working day notice prior to all inspections at (760) 955-5103. 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. It shall be the **contractor's** responsibility to protect survey monuments in place and the **contractor** shall be financially responsible for resetting damaged or destroyed monuments.
8. 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.
9. No grading shall commence prior to 7:00 a.m. each working day.
10. Dust control shall include:
 - a. Provisions for continuous watering during grading operations including a 24-hour on call operator or as directed by City Staff.
 - b. Upon completion of the project, the entire site is to be stabilized by treating with magnesium chloride or other approved method and as approved by City Staff
11. Clear all cut and fill areas of vegetation and organic materials to a depth of six (6) inches or more.

12. Fill shall be placed in lifts of eight (8) inches or less and sufficient moisture added and material compacted to achieve the required percent of compaction.
13. No rocks greater than six (6) inches in diameter may be placed in fill.
14. Compaction shall be a minimum of ninety percent (90%).
15. Minimum slope for all graded areas shall be one percent (1.00%) unless on smooth PCC, then the minimum slope shall be one-half percent (0.50%).
16. Maximum slopes shall be 2:1. Slope stabilization shall be provided on all slopes in accordance with Article 2 of Chapter 5 of Title 16 of the City of Victorville Municipal Code.
17. All off-site improvements shall be constructed to City of Victorville Standards
18. All fences and walls are under separate permit.
19. Retaining walls shall be constructed to City of Victorville Standards or wall calculations submitted to the Building Department for City approval.
20. Building pad and grading plan certification shall be completed by a licensed engineer in accordance with Article 2 of Chapter 5 of Title 16 of the City of Victorville Municipal Code.
21. The maximum allowable foundation bearing pressure shall be 1500 psi unless approved by the City of Victorville Building Department.
22. The **contractor** shall comply with the Grading Ordinance Section 16-5.02.060 and Section 16-5.02.070 of the City of Victorville Municipal Code as it relates to borrow pits, export sites and haul routes prior to issuance of a grading permit.
23. A Paleontological Monitor must be present during all phases of grading when required by City Staff.
24. Approximate Quantities:

Cut _____ cu. yds.

Fill _____ cu. yds.

Shrinkage _____ %

25. Construction activities of one (1) acre or more shall require a General Construction Storm Water Permit. For more information, you may call the State Water Resources Control Board – Division of Water Quality at (916) 657-1146.
26. All grading shall comply with this Grading Plan and the recommendations set forth in the soils report entitled _____, prepared by _____, and dated _____.
27. Waste Discharge Identification Number (WDID): _____

Note: Where **contractor** appears in the above notes, owner, developer or engineer may be substituted as appropriate.

EROSION CONTROL PLAN

DESIGN REQUIREMENTS (minimum)

- Design requirements are subject to the City Standard Specifications for Public Improvements and City Municipal Code.
- Bearings and distances along centerlines shall match the approved (recorded) tract map.
- All street names shall match the approved (recorded) tract map.
- All lot lines and lot numbers shall match the approved (recorded) map.
- Show all easements and natural drainage courses.
- Station and elevation must be shown at grade breaks and key design points
- Existing elevation contours (typically 2' maximum interval) and topography mapping extending 100 feet minimum beyond project limits or further if design impacts are a concern.
- Direction and gradient of all flow lines and sheet flows.
- All designed structures draw to scale or on detail drawing.
- Show where incoming water runoff enters project and address control of runoff through project.
- Show where water is leaving the site and how it will be returned to its natural drainage course.
- The following must be shown as applicable:
 - Silt fence locations
 - Sediment Basins or Traps
 - Gravel Bag or Fiber Roll Berms
 - Sandbag Barriers
 - Straw Bale Barriers
 - Storm Drain Inlet Protection
 - Stabilized Construction Entrances
 - Stabilized Construction Roadways
 - Tire Wash Exits.
 - Equipment Storage Area(s)
 - Chemical Storage Area(s)
 - Material Storage Area(s)
 - Water Velocity Reducers (sandbag) locations.

EROSION CONTROL GENERAL NOTES (minimum)

1. Placement for erosion control is required for grading operations during the rainy season (October 15th to April 15th).
2. The design Civil Engineer shall supervise erosion control work and insure that work is in accordance with the approved grading plan (if required).
3. Equipment and workers for emergency work shall be made available at all times. Necessary materials shall be made available on site and stockpiles at convenient locations to facilitate rapid construction of temporary devices when rain is imminent.
4. Devices shall not be moved without the approval of the City Engineer.
5. All removable protective devices shown on the erosion control plan shall be in place at the end of each day when the five day rain probability forecast exceeds forty percent (40%).
6. After a rainstorm, all silt and debris shall be removed from check berms, silt fences, desilting basins and the basins pumped dry.
7. Graded work areas around the project at perimeter must drain away from the face of the slope at the conclusion of each working day.
8. The contractor shall be responsible and shall take necessary precautions to prevent public trespass onto areas where impounded water creates hazardous conditions.

9. De-silting basins are to be constructed as grading of individual grading areas are complete per rough grading plans.
10. Temporary erosion protection is required for manufactured slopes prior to permanent planting. All slopes exceeding three feet in height shall use a planting mix for basic erosion control if not landscaped immediately following grading Basic erosion control mix:
 - A. Lbs. /acres Species Purity Pls.
 - B. 20.0 Bromiis Mollis 95/89 81%
 - C. 30.0 Trifolium Hirus 95/85 81%
 - D. 8.0 Vulpia 90/80 72%
11. All areas shall be maintained such that emergency response vehicles have access. (Including access to neighboring property). In Case of emergency contact _____ of _____ at _____.
12. No obstruction or disturbance of natural drainage courses or existing storm drain inlets shall occur during the rainy season unless adequate temporary/permanent drainage facilities have been approved and installed to carry surface water to the street, storm drain or natural water courses.
13. The contractor shall conduct his operations in such a manner that the storm run-off will be contained within the project or channeled into the storm drain system that serves the run-off area. Storm run-off from one area shall not be allowed to divert into another run-off area.
14. Conformance with the erosion control plan does not relieve the contractor from his responsibilities to protect the adjacent properties from possible damage that may arise as a result of the construction of this project. Erosion control shall consist of, but not be limited to, constructing such facilities and any other measures that are necessary to prevent, control and abate water, mud and erosion damage to public and private property as a result of the construction of this project.
15. Slopes constructed prior to October 1st shall be treated for erosion control prior to October 15th. Slopes constructed after October 1st shall be treated for erosion control as the construction of slopes progresses in increments of twenty five feet (25') or less measured vertically.
16. Fill areas, while being brought up to grade and during periods of completion prior to final grade, shall be protected by various measures to eliminate erosion and the siltation of downstream facilities and adjacent areas. The measure may include, but may not be limited to: temporary down-drains, either in the form of pipes or paved ditches with protected outfall areas; graded berms around areas to eliminate erosion of fill slopes by surface run-off; confined ponding areas to desilt run-off; protection such as sand bags around inlets which have not been brought up to grade; and earth berms and appropriate grading to direct drainage away from the edge of the top of the slopes shall be constructed and maintained in fill areas where earthwork operations are in progress.
17. Top of cutoff brow ditches, where required on the plans, shall be constructed prior to exceeding twelve feet (12') of cut, measured vertically.
18. Clearing and grubbing shall be limited to areas that will receive immediate grading. Erosion control measures will be required to protect areas which have been cleared and grubbed prior to grading operations and which are subject to run-off during the period of rainy season. These measures may include, but not be limited to. Graded ditches, brush barriers and silt fences. Care shall be exercised to preserve vegetation beyond the limits of grading.
19. At the completion of rough grading, but during underground utility installation, erosion control devices may not be placed in areas of active construction but shall be available on site. When the three day rain probability exceeds forty percent (40%), erosion control measures shall be implemented.
20. At the completion of street paving, a minimum of two (2) sandbags high, shall be placed in accordance with one of the following alternatives:

- A. Sandbag velocity reducers, a minimum of two (2) sandbags high shall be placed at an angle of forty-five degrees (45%) with the curb and shall begin at the curb and extend a distance of eight feet (8') from the curb, measured perpendicular to the curb. The distance between the velocity reducers shall be as follows: Street grade being four percent (4%) or less shall be spaced at a maximum of two hundred feet (200'); street grade being between four percent (4%) and nine percent (9%) shall have a maximum spacing of one hundred feet (100'); and street grades greater than nine percent (9%) shall have a maximum spacing of fifty feet (50').
 - B. Provide erosion control on individual lots and in the parkway and continuous placement of sandbags along the top of the curb.
21. Approval of these plans does not relieve the developer from responsibility for the correction of error and omission discovered during construction. Upon request, the required plan revisions shall be promptly submitted to the City of Victorville for approval.
22. A guard to insure public safety will be posted on the site whenever the depth of water in any device exceeds two feet (2').
23. Waste Discharge Identification Number (WDID): _____

SEWER IMPROVEMENT PLANS

DESIGN REQUIREMENTS (minimum)

- Design requirements are subject to the City Standard Specifications for Public Improvements and City Municipal Code.
- Improvements and elevations shown must match other plans for project.
- Bearings and distances along centerlines shall match the approved (recorded) tract map.
- All street names shall match the approved (recorded) tract map.
- All lot lines and lot numbers shall match the approved (recorded) map.
- Show all easements and natural drainage courses.
- All existing conditions and proposed improvements for subdivision project shall be shown and drawn to scale.
- All proposed and existing underground utilities shall be shown in order to determine possible conflicts.
- All sewer design improvements shall be fully controlled and dimensioned to accommodate construction staking.
- All structures shall be drawn to scale and detail(s) provided for clarity where needed.
- Plan and profile views must be shown for all sewers and stationing aligns with each other when possible.
- The elevation lines of the profile grid shall be labeled every 10 feet, the stationing lines of the profile shall be labeled every 100'.
- Stationing typically will be along street centerline, matching street improvement plans, and the station labeled every 100'. Dimensions from pipeline to street centerline shall be shown. In the event pipeline length and differs from street centerline length, (due to curves or non-parallel alignments, etc.) 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.
- Manholes will be stationed and distances between manholes given.
- Distance between manholes shall not exceed 350'.
- Clean-out distance from manholes shall not exceed 175'
- All laterals shall be shown and stationed at the wye. Laterals shall be constructed to the edge of public right-of-way or easement. The station of the lateral end at right-of-way shall be given if differing from wye stationing.
- The minimum grade for laterals is 2.00% within street right-of-ways and 1.00% within private property.
- Minimum distance between laterals is 5' and 7' from center of manholes.
- An anti-backflow device shall be installed on laterals where the pad elevation that the lateral serves is lower than the rim elevation of the first upstream manhole on the sewer main.
- Where connection to existing sewer is designed, a note requiring the construction contractor to verify exact location of connection point prior to beginning of construction will be added.
- 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.
- Typical location for sewer pipeline is 5' off street centerline, at least 10' and on the opposite side of the street from parallel water pipelines. All pipeline installations will conform to applicable State Department of Health Services Standards for separation of potable water mains and sanitary sewers.
- All underground structures and utilities that may conflict or impact the proposed construction must be shown including exact location (if it can be determined) and proposed relocation. (if required) The minimum separation between such utilities shall be given.
- All sewer extensions for future connections shall be constructed beyond the limits of street improvements. (new pavement will not be cut or removed within 3 years)
- Each manhole shall be uniquely numbered and the station indicated.

- The minimum grade for all sewer mains is 0.40% unless previously approved by the City Engineer. Under certain conditions and with the City Engineer's approval the following flatter grades may be permitted.
 - 0.29% for 10" pipe
 - 0.22% for 12" pipe
 - 0.16% for 15" pipe
 - 0.12% for 18" pipe
 - 0.10% for 21" pipe
 - 0.08% for 24" pipe
- Grade breaks between manholes are not allowed.
- Existing and proposed grade over the sewer pipeline shall be shown in the profile view.
- Concrete encasement is required for cover less than 5' over the top of pipeline.
- Utilities crossing the sewer pipeline must be shown in both plan and profile views
- Grade through manholes shall be equal to the slope of the sewer pipe leaving the manhole with a minimum fall through the manhole of 0.10' for straight runs and 0.20' through turns.
- The elevation of the pipe invert entering and exiting the manhole shall be shown on the profile view.
- The finish surface of the manhole rim shall be given.
- The grade and distance of the pipeline between manholes shall be given on the profile view.
- The size and class of pipe constructed shall be indicated on both profile and plan views.

SEWER IMPROVEMENTS GENERAL NOTES (minimum)

1. Unless otherwise noted, all construction and materials shall conform to the applicable provisions of the latest revision of the City of Victorville Standard Specifications for Public Works Construction, and Standard Drawings on file with the City of Victorville.
2. **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 excepting for liability arising from the sole negligence of the owner or the engineer.
3. 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.
4. 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.
5. The **contractor** shall notify the City of Victorville Engineering Department at least 1 working day prior to necessary inspections at (760) 955-5158. 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.
6. The **contractor** shall notify Underground Service Alert 2 working days in advance of excavation at 1-800-422-4133 for exact utility locations.
7. It shall be the **contractor's** responsibility to familiarize himself/herself with site conditions and of any underground utilities shown or not shown on these plans.
8. Existing utilities shall be maintained in operation during construction.
9. 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**.
10. 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**.
11. 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.
12. 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.

13. 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.
14. 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.
15. **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 wyes, tees, and lateral stubs.
16. All excavations shall be backfilled at the end of each working day and roads made safe and open to vehicular traffic.
17. The **contractor** shall be responsible for providing testing required by the City's Inspector and trench backfill compaction testing. A certification of compaction signed by a registered Engineer shall be submitted for all trench backfills.
18. Stations shown on profile are on centerline of the conduit, unless otherwise indicated.
19. Manhole rim elevations shall be staked in the field at time of construction.
20. Install hold-down bolts on all manhole covers.
21. All sewer pipe shall be vitrified clay pipe with mechanical compression joints or P.V.C. pipe conforming to the requirements of A.S.T.M. D-3034 (SDR 35). The I.D. shall not deflect more than 5%. Pipe shall be installed in accordance with manufacturer's recommendations. Granular bedding shall be installed per City Standard SS-05.
22. Sewer pipe lines shall be tested prior to making permanent service connections.
23. The **contractor** shall mark the curb where the sewer lateral crosses the curb and gutter with "S".
24. All sewers to be installed per City Standard number SS-05.

Note: Where **contractor** appears in the above notes, owner, developer or engineer may be substituted as appropriate.