

SECTION II **PREPARATION OF PLANS**

II-1. GENERAL

Complete plans and specifications for all proposed public improvements that are not initiated by the City must conform to these Standard Details and Specification requirements contained in this document. Public Improvement Plans and Specifications shall be submitted to the City for approval. All plans and specifications must receive City approval prior to commencement of public improvement construction.

The City's approval of any plans and specifications does not constitute approval of any feature of the plans that are contrary to, in conflict with or do not conform to any Federal or State law, City Ordinance or Resolution, or generally accepted engineering practice, in keeping with the standards of the profession, even though such errors, omissions or conflicts may have been overlooked in the review of the plans. The City Engineer may request revision to the plans or constructed improvements related to non-compliance with codes, regulations, errors, omissions, or other design or construction issues at any time.

II-2. DESIGN ALTERNATIVES AND EXCEPTIONS

Design alternatives may be considered by the City Engineer where the proposed alternative provides the same level of service, approximately the same estimated maintenance costs, and is not adverse to public health, safety, and welfare.

From time to time, unusual site conditions may warrant a deviation from these Public Improvement Standards. When such situations warrant a deviation, the Project Engineer may request a design exception but must otherwise design to the minimum standards contained herein. The Project Engineer must demonstrate that the proposed deviation adequately addresses public health and safety, long-term maintenance, environmental impacts, and orderly community development. Avoiding or reducing project costs is not normally an adequate reason for submitting a design exception. As these assessments require professional engineering judgment, all proposals for a design exception must be prepared by a registered professional engineer and be approved by the City Engineer and affected Department.

Requests for a design exception shall be proposed in writing by the Project Engineer in memo format. The Project Engineer must sign and seal the Design Exception Application to the City. The City will provide written response to design exception requests by either approving, conditionally approving, or denying the request. The City Engineer may request modifications to the design exception in order to approve any request. All request memos must address the following items as applicable:

A. Minimum Required Information for Design Exceptions:

1. Proposed project and existing site condition.
2. Project conditions and or required design standard.
3. Reason for the design exception request.
4. Proposed alternative design.
5. Description of the maintenance associated with improvement, maintenance cost.
6. Verification that the improvement will not pose a risk to public health and safety and provides the same level of service.
7. How the proposed alternative will comply with the State of California Post Construction Stormwater Requirements (If applicable).
8. Project Engineer's statement:

"I recommend this design exception, based on the justification in this memo, be approved by the City Engineer, or authorized designee, of the City of Paso Robles."

(Include date, signature, and Engineer's Stamp.)

B. Geometric Control Criteria. Design exceptions to the following geometric control criteria shall be approved by the City Engineer or authorized designee:

1. Design speed
2. Cross slope
3. Lane and shoulder width
4. Superelevation
5. Horizontal and vertical alignment
6. Horizontal and vertical clearance
7. Stopping sight distance
8. Bridge width
9. Grades
10. Standards otherwise indicated to be approved by the Director including guardrail layout and materials, driveway sight distance, etc.

C. Other Requirements. Unless otherwise indicated, all other requests for a design exception shall be approved by the City Engineer and or the Utilities Director, or the Public Works Director as appropriate. The City Engineer may require City Council approval for design exceptions.

D. Emergency Substitutions. The City Engineer will consider requests for emergency substitutions involving materials that suddenly become unavailable, provided requests for such emergency substitutions, including all data to show substitutions comply with specifications, are received at least fifteen calendar days before date of use. Long lead times prior to start of construction is not necessarily grounds for an emergency substitution.

II-3 AMERICANS WITH DISABILITY ACT REQUIREMENTS

The Americans with Disability Act (ADA) was signed into Federal law in 1990. ADA seeks to provide equal access to public facilities for all Americans regardless of age or physical ability. Following the Federal law, Title 24 of the California Building Standards Code has also been enacted to further promote equal access to public facilities. These laws have been revised from time to time at both the State and Federal level. Many of these revisions were devised to better address transportation facilities within the right-of-way.

Since the ADA requirements are contained within the Federal and State law, the users of these standards are also expected to fully comply with the law. The information included in these standards are provided to assist the user and to help ensure City facilities are also in compliance.

- A. Design Requirements. The design and placement of ADA facilities within the public right-of-way including curb ramps and designated parking spaces shall conform to Caltrans Standard Plans and Standard Specifications.
- B. Design Aids. The following are useful design aids for understanding and implementing ADA:
 - 1. CalDAG (California Disabled Accessibility Guidebook)
 - 2. ADAG (Americans with Disabilities Act Guidelines)
 - 3. PROWAG (Pedestrian Right-of-Way Accessibility Guidelines)

Design Exceptions. Design exceptions to ADA requirements for transportation facilities within the City maintained right-of-way shall be approved by the City Engineer. Federal regulations allow the use of other accessibility standards if they provide substantially equivalent or greater access as the minimum Federal accessibility standards. Similarly, the California Building Code allows the enforcing agency to make design judgments as to equivalent designs.

Requests for an ADA design exception shall be proposed in writing by the Project Engineer in a prescribed format (see Section II-2). The Project Engineer must sign and seal the Design Exception request and submit the application and all support documentation to the City Engineer. The City Engineer will provide written response to design exception requests by either approving, conditionally approving, or denying the request.

II-4. TITLE SHEET AND PLAN PREPARATION

Plan Format, Sheet Size and Scale - Plans shall be submitted in PDF electronic format on bond paper. Sheets shall be 24 inches by 36 inches (24" x 36") standard plan and profile. Desirable scales are 1" = 40' or 1" = 20 feet.

Stationing and Orientation - The stationing on plan and profile sheets shall be orientated from left to right. Insofar as practical, the plans shall be arranged so that the north arrow is either pointed toward the top or to the right edge of the sheet.

Title Sheet - A title sheet is required on all sets of improvement plans greater than four (4) sheets. The title sheet should include a key map of the entire project area; an index of sheets; the preparer's company name, professional registration stamp and signature; project identification (tract, parcel map, planned development number); vicinity map; and the blocks for the necessary approval of the City Engineer, Public Works Stormwater, Public Works Parks, Utilities Water Division, Utilities Wastewater Division, Recycled Water Division, Emergency Services, and public utilities serving the development or project. When public utilities will not sign plans, a letter will satisfy this requirement.

Notes - The title sheet of the plan set shall include the pertinent City notes. City notes can be downloaded at <https://www.prcity.com/217/Engineering-Standards>. The plans shall also include any special notes unique to the project design be shown on the relevant sheet of the plans.

Vertical and Horizontal Control - Vertical datum reference shall be based on NAVD '88 using at least one permanent benchmark listed in the City of Paso Robles Benchmark System, or published by the National Geodetic Survey (NGS). A local temporary benchmark (TBM) should be established at the project site using the same basis of elevation as the permanent benchmark. Plans shall provide an accurate description and elevation of both permanent and temporary benchmarks referenced. Horizontal control shall be registered to the California State Plane – Zone 5 NAD 83 projected coordinate system as specified in Section II-11.

Basis of Bearings - The plans shall indicate the basis of bearings that will be utilized for construction of the improvements. The plans shall include a description of the points that form the basis of bearings, along with the appropriate reference information.

Right-Of-Way - Right-of-way lines, the boundaries of lots fronting on the right-of-way lines, and all easements shall be accurately drawn and dimensioned.

Survey Monuments - Pursuant to Section 8771(b) of the California Business and Professions Code, existing survey monuments that control the location of subdivisions, tracts, boundaries, roads, streets or highways, or provide survey control, that are within or adjacent to the area of work, shall be located and referenced and a corner record or record of survey of the references shall be filed with the County Surveyor by or under the direction of a licensed land surveyor or registered civil engineer legally authorized to practice land surveying. This shall occur prior to the time when any streets, highways, other rights-of-way, or easements are improved, constructed, reconstructed, maintained, resurfaced or relocated. At the time improvement plans are submitted to the City for any construction work within the public right of way, the improvement plans shall show evidence that the property corner monuments (existing survey monuments both surface and sub-surface) or street centerline monuments that are within or adjacent to the area

of work have been searched for by a licensed land surveyor, or by a civil engineer licensed to perform land surveying. These monument positions shall be identified on the plans by station and offset from the new centerline, or by state plane coordinates.

IMPORTANT NOTE: A listing of the monuments that can or will be disturbed must be listed and shown on the plans.

If any existing survey monument is disturbed in any way by the improvement work it shall be reset accordingly and a corner record or record of survey shall be filed with the County Surveyor, prior to the final acceptance of the work by the City.

Stationing and Orientation - The stationing on plan and profile sheets shall be orientated from left to right. When a previously designed project within or immediately adjacent to the new project is used as basis of design, plans should use the same stationing of the previous plan or provide an equation to said previous stationing. As practical, the plans should be arranged so that the north arrow is either pointed toward the top or to the right edge of the sheet. Lettering and dimensions should typically be read from the bottom or right margins.

Cross Sections - Cross sections shall be provided for all designs involving widening existing roads. The spacing of cross sections shall be based on the characteristics of the project, as determined necessary by the City Engineer.

Existing Features - All pertinent topographic features which may affect the design, construction, and operation of the improvement shall be shown on the plans including but not limited to the following: existing curbs, sidewalks, paving edges, utility structures, vaults, poles, underground utility lines, buildings, fences, trees, retaining walls and all other features on or adjacent to the project.

II-5. GRADING PLANS

Grading plans shall typically include the following:

- A. Project statistics table on the cover sheet including:
 - 1. 24-hour contact phone number.
 - 2. Cut and fill quantities.
 - 3. Area of disturbance.
 - 4. Post Construction Stormwater Performance Requirement.
 - 5. State of California WDID number for projects disturbing more than one acre.

- B. Existing Conditions. Existing topography including property boundaries, easements, paving edges, curbs, utility poles, vaults, and boxes, buildings, trees, and the boundaries of any 100-year floodplain. The topography shall extend onto surrounding properties, far enough to determine potential offsite impacts including oak trees.

- C. Oak Trees. In accordance with the City's oak tree ordinance, the exact location, trunk diameter (4 inches or larger), drip line and critical root zone of all Oak trees must be accurately identified.
- D. Cross Sections. Cross-sections between the property subject to development and adjoining properties.
- E. Vertical Elevations. Pad elevations, street elevations, typical lot grading sections and typical cross-sections between subdivision lots.
- F. Quantities. Volumes of earthwork including cubic yards of cut, fill, over-excavation and backfill, export and import.
- G. Supporting studies. Soils and or geological report.
- H. Other Information:
 1. 24 Hour emergency contact for the project.
 2. Erosion and sediment control plan.
 3. Show ADA and CBC compliance for all access to building entrances.
 4. Borrow soil, stockpile, and fill locations for excess or negative soil balances.
 5. Retaining wall location with top and bottom of wall callouts.
 6. Project Conditions of Approval.

II-6. COMPOSITE UTILITY PLAN

A composite utility plan is required for all Tracts. Utility signatures shall be on the plan set cover page. Contact the City Engineer for direction on other larger projects. The composite utility plan must be prepared and signed by a representative of each utility company providing power, gas, phone, cable television and internet service. The plan shall show comprehensively all the following utilities:

- Gas
- PGE
- Phone
- Communications
- City Fiber Optic
- Cable
- Water, sewer, recycled water lines
- Lift Stations
- Booster Pump Stations, tanks, and wells
- Fire hydrants
- Streetlights
- Utility vaults
- Splice boxes
- Points of service to each subdivision lot

II-7. STREET IMPROVEMENT PLANS

Street improvement plans shall include the following:

- Design Speed, Design Volume, Traffic Index, Paving Section.

- Dedicated rights-of-way, existing and proposed centerline profile, vertical curve data, and curb profiles where they vary from centerline information. Street dimensions and typical street cross sections including curb, gutter and sidewalk in relation to construction centerline.
- Plan view should include all curbs, gutters, cross-gutters and catch basins. The beginning and ends of horizontal curves shall be noted and stationed. Limits of paving shall be clearly indicated. Locations of existing and proposed survey monuments, street name signs, traffic signs and street lights shall be noted.

II-8. UNDERGROUND SEWER, WATER, RECYCLED WATER, AND STORM DRAIN PLANS

Sewer, water, recycled water, and storm drain designs shall typically be combined on underground utility sheets separate from street improvement design sheets. Plan and profile views shall show water, sewer, recycled water, and stormdrain lines and separations. The Project Engineer may request that underground utility sheets be included in the street improvement design sheets for small projects. Underground utility sheets shall include:

- Profiles and design grades of sanitary sewer, water, storm, recycled water mains and appurtenances, and catch basins.
- Water and Recycled Water distribution plans shall identify the locations of all services, gate and butterfly valves, air vacuum release valves, blow-offs and fire hydrants.
- Sanitary sewer plans shall identify the locations of all laterals, manholes and clean-outs.
- Plans for storm drains shall include locations of all catch basins, collection devices and manholes. Hydraulic grade-line profiles shall be shown.

II-9 TRAFFIC CONTROL PLANS

Traffic Control. Plans for work zone traffic control, and for installation of new permanent traffic control devices, shall be drawn on sheets and to an appropriate scale. Work zone traffic control must reference the California Manual on Uniform Traffic Control Devices (CAMUTCD) or State Standard Specifications (current version adopted by the State). The standard traffic control notes shall be placed on the same sheet. If new permanent traffic control devices include traffic signals or lighting, the necessary electrical details shall be incorporated into these sheets.

II-10. EROSION AND SEDIMENT CONTROL (ESC) PLANS

Erosion and Sediment Control Plans are reviewed as part of the Grading plan check process. ESC plans must be prepared by a licensed civil engineer and submitted with grading plans. The ESC features shown on plans must be implemented throughout construction, regardless of the season or weather conditions. Refer to Section III (Construction Observation and Stormwater Quality Management).

II-11. LANDSCAPE PLANS

Plans for landscaping of all medians, parkways, detention basins, open spaces, or other areas to be maintained by the City, or the Landscape and Lighting District, shall be prepared by a Landscape Architect and comply with these Standard Details and Specifications. Landscape plans shall be submitted as part of the improvement plan set to the City Engineer. Landscape trees shall be chosen based on the approved locations specified in the City's approved Street Tree list.

II-12 DETAILS

The plans shall include one or more sheets entitled "Details," which shall show the following as applicable:

- Copy of all City Standard Drawings which are referenced in the design. If another Standard Drawing from another Agency is proposed for use, then that drawing will be identified in the design exception process. City Standards that are proposed for use, but include proposed changes, must also be identified in the design exception process. All modifications to City Standard Drawings must be clearly identified on the Standard Drawing.
- Detail of all concrete structures.
- Details of drainage and flood control structures.
- Details of stormwater structures.
- Details of Water, Sewer, or Recycled Water Piping and Fittings
- Details of any element of the plans required for clarity.
- Miscellaneous details.
- Other agencies' standard details which are referenced in the design.
- Temporary and permanent erosion control standards/details referenced in the design.

II-13. RECORD DRAWINGS

During the progress of construction the Project Engineer and contractor shall maintain a record of all significant deviations from the approved plans. Prior to acceptance of the work by the City, the Project Engineer will provide one copy set of the improvement plans with all record changes noted for approval by the City Engineer. Upon approval of the draft Record Drawing set, the Project Engineer shall provide to the City Engineer a signed and stamped full size set of Record Drawings on bond paper and in the following electronic formats: AutoCAD drawing file, Acrobat PDF file, and ESRI Compatible Format (as specified below).

ESRI COMPATIBLE FORMAT - GIS and CAD Data Requirements

All digitized GIS and CAD data must be delivered electronically and in ESRI compatible format. Compatible formats are:

- File Geodatabase

- Shape File (.shp)
- .DXF (accompanied by a .shp)

Projection

All data shall be created using the following Spatial Reference information:

Projected Coordinate System: NAD 1983 State Plane California V FIPS 0405

- Feet
- Projection: Lambert Conformal Conic
- WKID: 2229
- Authority: EPSG
- Linear Unit: US Survey Feet

Geographic Coordinate System: GCS North American 1983

- WKID: 4269
- Datum: D North American 1983

Geographic Region

Data submitted should fall generally within a geographic region denoted by a bounding box with the following coordinates in Degrees Decimal Minutes:

- NW corner: -120.75, 35.73
- NE corner: -120.5, 35.73
- SE corner: -120.5, 35.53
- SW corner: -120.75, 35.53

Metadata: Information about the data shall be included as metadata compatible with ESRI software. This metadata shall have the following for each GIS or CAD layer and table submitted:

- Data source
- A description of all data fields
- Descriptions of any codes utilized in the data fields
- What project the data was created for
- When the data was created
- A statement on the accuracy of the data
- A description of the techniques used to create or collect the data
- What scale the data is useful for (examples are regional, neighborhood, block, building)
- Expected update intervals
- The geographic extent of the data
- Any other information that will prove useful to any present and future users of the data