



Preparing Street Light Plans

This document represents a general guide of the basic street light design plan features. Each project is different and in no way constitutes all the elements required for the street light plan. Because some projects are unique, engineering staff may require special details be added to clarify the plans for constructability. This list does not preclude the City from requesting additional information or detail on the plans sheets, if necessary. (10-20-2021 V2)

General

- The street light plans must be submitted on 24" x 36" sheets.
- The scale must be shown on the plans 1" = 20' or 1" = 40'
- A north arrow is required on each sheet.
- A vicinity or site location map is required on the cover sheet.
- The developer's name, address and phone number must be shown on the cover sheet.
- The street light design professional name, address and phone number must be shown on the cover sheet
- Show and label all abutting streets.
- Once the plan is completed and signed, an electronic dwg, dxf, or dgn; and pdf shall be provided to the City.

Photometric/Design Plan

- A photometric plan shall be submitted prior to preparation of plans unless four (4) or less a street lights are added to an existing system. The photometric plan shall clearly identify all existing street lights that may impact proposed street light plan. In such cases, the same spacing, setback, wattage and fixture type shall be used to match existing conditions.
- The plan will clearly identify in table format the uniformity, maximum, minimum and average foot candles. The Illumination Engineering Society (IES) guidelines shall also be included on the plan to compare the results. All assumptions such as type of pavement and set back shall be clearly identified. The plan shall include the use of all LED street and pedestrian light technology with minimum 10 year warranty and 100,000 hour life for cobra head and decorative type fixtures.
- The photometric plan shall clearly identify the mounting height, arm length, wattage, voltage, and spacing of street lights shall be completed in accordance to the (IES) RP-8-14 minimizing any dark spots near access drives, mailbox collection, bus-stops, transit areas, alleyways, or crosswalks.
- Street lights shall be located on the property line.
- On streets with separated sidewalks, street lights shall be located at the front of the sidewalk within the parkway strip. The edge of the pole foundation shall meet the front of the sidewalk.

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- An application or correspondence referencing a request for service to PG&E shall be included in the plan set. The connections point(s) shall be clearly identified on the plan.
- All existing and proposed waterlines, fire hydrants, overhead, and underground utilities shall be shown.
- All proposed trees shall be at least twenty (20') from a proposed street light pole location.
- All plan sheets shall display construction notes pertinent to each sheet.
- All right-of-way shall be shown.
- There shall be a minimum of six (6') feet of clearance between the streetlight poles and fire hydrants, city water facilities, or city sewer facilities. Provide dimensional ties to fire hydrants where potential conflicts may occur (within 10' of street light pole).



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- All conduits shall include a 5/8" flat woven minimum 2400 lb traceable pull tape. All conduits shall be 2", schedule 80 and include bell ends with duct seal. No conduit or wire splices are allowed.
- Any conduits modified as a result of the project shall include clear instructions. Construction notes where conduit and wires are to be modified shall clearly indicate how the wire is to be pulled back, where it is to be pulled from, where the pull box will be located and the new termination point. In cases where modification of a street light will take place and the route or location is further than the conductors will allow, new conductors will be pulled into the conduit.
- A quantity tabulation or schedule of the number of streetlight poles on the cover sheet shall be included.
- All street lights and conduits must be clearly labeled with the wattage, voltage, and number. The conduit shall be clearly labeled with the size and conductor type/size.
- The symbols shall be consistent with those identified on the most current Caltrans Standard Details. References shall be made to the ES-1A and ES-1B of the State standard plans. If other symbols are used, it shall be clearly identified in the legend.
- All pull boxes shall be No. 5 per the most current Caltrans Standard Details unless otherwise noted.
- Pull boxes and street light bases shall include a housekeeping pad with the concrete poured as a single unit. A minimum 12" apron shall be poured around the street light and edge of the pull box. Areas not feasible to landscape or irrigate (Typically 12" or less) shall be included as a part of the housekeeping pad. This includes landscaping strips or corners.
- Each street light plan shall include voltage drop calculations included in the plan set.
- Any relocated street lights shall clearly identify a "from" and "to" leader identifying the existing location and proposed location of the street light.

APPROVAL:	DATE: _____

TRAFFIC ENGINEER	
_____	_____
RCE#	EXPIRATION

This signature in no way relieves the design engineer of liability. This signature signifies that the work is in general conformance of the City's guidelines, practices, policies, general provisions, and specifications.

Typical Street Light Notes

- All improvements shall be constructed in strict accordance to the City of Fairfield standards specifications and plans adopted in 2021 or current and any amendments or changes thereto to date including any special provisions, the most current California Department of Transportation Standard Specifications, where applicable. The general or construction notes stated in these plans shall override any conflicts which may appear in the Fairfield Standard Specifications and Details or Special Provisions.
- These plans shall accompany special provision specific to the project. If special provisions are not provided, a complete set of notes shall include items specific to the project.



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- The contractor shall not proceed with any work called for on these plans until the City and Traffic Engineer's signature of approval is affixed and all applicable permits have been obtained. An approved set of plans and specifications shall be on the job site during any construction. The contractor agrees to assume sole and complete responsibility for job site conditions during the course of construction; that this requirement shall apply continuously and not be limited to normal working hours and that the contractor shall defend, indemnify and hold the owner and the city harmless from any and all liability, real or alleged in connection with the performance of the work on this project, excepting for liability arising from the sole negligence of the owner or engineer.
- The locations of all underground facilities shown on this plan are approximate. A reasonable effort has been made to locate and delineate all underground facilities; however, the City or engineer assumes no liability for the accuracy or completeness of the existing facilities shown hereon or for the existence of other underground utilities or objects which may be discovered but are not shown on these plans. The contractor shall verify the location of all existing facilities and immediately notify the City or engineer if any such facilities interfere with the construction of the improvements.
- The contractor is hereby notified that prior to commencing construction he or she is responsible for contacting all utility companies via the underground service alert (USA North) at 811 or (800)227-2600 prior to excavation for verification of all underground facilities where such facilities may conflict with placement of improvements shown on the plans.
- Work hours shall be limited to 9:00 to 3:30pm on a non-holiday work week. Special attention shall be made near school(s) and the disruption of school traffic or business with unusual traffic circulation. The contractor shall make every effort to provide access in order to maintain circulation. Provisions shall be made to coordinate work within ½ mile from any school or business that may require special attention.
- The contractor shall submit a traffic control and/or detour plan for approval by the City of Fairfield Public Works Department prior to the start of construction. The contractor shall provide all lights, barricades, signs, flag person or other devices necessary for the public safety and in compliance with Part VI of the California Manual of Uniform Traffic Control Devices (CA MUTCD). Pedestrian access shall be provided and maintained at all times.
- The contractor is responsible for all fees and PG&E coordination required to connect and energize the street light. The contractor shall install all the street light numbers as identified by PG&E and confirmed with the City a 2 inch reflective black on white adhesive label aimed 45 degrees to the roadway and mounted at 7 feet high from grade.
- All street light conduits shall be a minimum of 2 inch schedule 80 manufactured from a Type I, Grade I Polyvinyl Chloride (PVC) compound with a Cell Classification of 12454 per ASTM D1784 and contain less than 180 degree in bends. A pull box may provide relief of any bend that occurs along the path, except in the roadway. There shall be no more than **200** feet between pull boxes. All conduits entering a pull box shall include an end bell with duct seal. Absolutely no pull boxes in the travel way. All conduits shall include a solid #8 AWG bonding wire. Conduit shall be placed a minimum of 48" under the finished grade of the street, 12" under sidewalks, and 24" under landscaping or at back of sidewalk.
- A ¾ inch 2,500 lb woven traceable pull tape with footage marks shall be installed in all conduits.



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- Pull boxes shall be constructed with a precast fiberglass polymer concrete able to sustain 22,500 lb loadings. The pull box shall be constructed with a 12 inch x 4 inch deep apron poured monolithically with the street light pole as one complete system. If there is 12 inch or less exposed between the back of curb or the sidewalk, the apron shall extend to both. The bottom of the pull boxes shall include $\frac{3}{4}$ inch clean graded rock. There shall be at least 10 inch of clearance from the bottom of the pull box lid to the top of the conduit. A minimum of 2 inch of conduit shall be exposed above the $\frac{3}{4}$ inch rock. Pull boxes shall include Anti-Theft Wire Enclosure System and be protected during construction and remain free of grout.
- The pull boxes shall include identification tags indicating the street light number. All pull boxes shall be clearly labeled with "Street lighting" or "Service".
- All conductors, including quantity and size, shall be identified on the plans. Unless otherwise specified, conductors shall be single conductor with THWN-2 (Heat/Water Resistant) Engineering Design Standards insulation, solid or stranded copper, sized and color coded in accordance with these standards and the National Electric Code. The same color of wire must be used for the whole length of the circuit. Tape shall not be used to identify the color of the wire. The minimum size for street lighting conductors in conduit runs shall be No. 8 A.W.G. except that No. 10 A.W.G. conductors may be used from the luminaire to the splice point.
- Absolutely no splices are permitted in the conduit. All conductor splices shall occur in the pull box. The splice shall occur in the pull box and shall be soldered with 60/40 lead/tin rosin core and taped.
- For street light modifications, the contractor shall pull back the existing conductors to the nearest pull box or street light and run a new conduit per the specifications stated above to the new pull box street lighting system. If the existing conductor is long enough, it can be re-pulled into the new conduit street light system. If the conductor length is inadequate new conductors shall be pulled into the system providing at least 6 feet of slack in the pull box.
- The street light wires shall not share the same conduit with the service wires. Street light outages will be kept to 24-48 hours unless otherwise required by engineer or City representative.
- If decorative street lights are installed on a new project, a minimum of two (2) spare pole and fixtures will be delivered to the corporation yard for maintenance.