



TRAFFIC SIGNAL PLAN CHECKLIST

This checklist shall be used as a guide to ensure that all of the basic elements are included on the traffic signal plan. This will help expedite the plan checking process. Any signal plan that does not include each of the basic elements listed below will be returned for revision and re-submittal.

GENERAL NOTES

1. All work material and equipment shall conform to the provisions of the Standard Plans and Specifications of the State of California, Department of Transportation (Caltrans) dated 2018, and the Special Provisions.
2. A City of Temecula Encroachment Permit shall be required to perform work within the public right-of-way. City approved plans do not relieve the contractor from the responsibility of obtaining an Encroachment Permit. A copy of the permit shall be kept on the construction site at all times.
3. The contractor shall be responsible for providing a detailed traffic control plan for any lane closures associated with the traffic signal construction.
4. The location of all existing underground utilities is approximate only. The contractor shall be responsible for verifying the exact location and depth of all utilities including those not shown on the plan prior to start of work. Contact Underground Service Alert at (800) 422-4133.
5. The contractor shall be responsible for obtaining an Electrical Permit from the City's Building and Safety Department for the service pedestal.
6. The contractor shall be responsible for obtaining all necessary permits and notifying affected agencies at least 72 hours prior to start of work.
7. Unless shown otherwise, inductive loop detectors shall be 6 foot in diameter with 10 foot spacing in the direction of travel. Front Loop detectors shall be Type "D" with two saw-cuts in the middle and set 1 foot behind crosswalk or limit line. All other loop detectors shall be Type "E". Loop detector wire shall be Type "2" and detector lead-in cable shall be Type "B". Prior to installation, the Engineer or his designated representative shall verify all loop detector locations in the field. All necessary striping shall be in place prior to positioning of detectors. Loop detectors shall be sealed with a "Hot Melt Sealant".
8. The Conductor Schedule is furnished as an installation guideline only. It shall be the Contractor's responsibility to provide the appropriate number of conductors required for the intended operation.
9. All signal equipment shall be McCain products and all shall have a black finish. All vehicle signal indications shall be 12 inch. The signal housing, backplates and visors shall be metal. Plastic signal heads and lenses are not permitted. All vehicle signal indications shall be **DIALIGHT** LED (ITE Specification **CLEAR LENS** with 15 year warranty).
10. All pedestrian signals shall be countdown. Pedestrian indications shall be Type A with international symbol displays. Pedestrian signal indications shall be **DIALIGHT** LED (ITE Specification with 15 year warranty). Pedestrian pushbutton sign mount shall be Type "B" with Phillips stainless steel screws only, 5"x7 1/2"-**R10-3E** (4 part countdown – double sided) MUTCD signs and ADA "Bulldog" push buttons (black).
11. All Emergency Vehicle Pre-emption equipment shall be **Tomar 4140V2-4 OSP Card** with 4090-21-ST-11C-W self-test detector. All EVPE optical detectors shall be **Tomar 4090ST** series, mounted on signal mast arm by clamping method. Prior to installation, the Engineer or designated representative shall determine the exact location of detector in the field.
12. All pull boxes shall be No. 6 concrete boxes per Caltrans Standard ES-8B, unless otherwise noted on the plans. Pull boxes shall not be located in or within 1 foot of any curb access ramps or driveway. All pull box covers shall be Fiberlyte only and marked "Traffic Signal".

13. The contractor shall verify with the Engineer the exact location of all traffic signal equipment prior to installation.
14. All conduits shall be a minimum of 3-inch Schedule 80 PVC unless otherwise noted. All stub-outs shall be 3-inch conduit. All conduits under roadway section shall be installed without open cutting. All conduits shall be installed with a minimum 12AWG bare solid copper tracing wire. Proper operation of the tracer wire shall be demonstrated prior to acceptance.
15. Each conductor shall be permanently identified. Identification shall be by direct labeling, tags or bands permanently fastened to the conductors. The identification shall be placed on each conductor or group of conductors in each pull box and near the end of each conductor where the conductors are terminated.
16. **Luminaires shall be GE Evolve 4000K (84 Watt) LED with 7 Pin Receptacle.**
17. Reflectorized Street Name Signs shall be used. Sign Legend shall be Type E (Modified) upper and lower case lettering. Signs shall be 8 foot long with Diamond Grade sheeting only.
18. Underground traffic signal conductors between pull boxes or otherwise shall not be spliced.
19. Any landscaping damaged by the traffic signal construction shall be repaired or replaced to the satisfaction of the Engineer and the property owner.
20. The contractor shall be responsible for completing all "punch list" items prior to traffic signal turn-on.
21. All Ethernet Switches shall be Cisco IE4000-4S8P4G-E (16 Ports) or City approved equal. All shall be installed with Cisco Small Form-Factor Pluggable (SFP) transceivers Model No. GLC-LX-SM-RGD and Power Supply with cord Model No, PWR-IE170W-PC-AC. All shall be installed in the Communications Cabinet or Controller Cabinet with a Cisco Din-Rail Mount Model No. STK-RACK-DINRAIL or City approved equal.
22. All Fiber Distribution Units (FDU) shall be Corning Model No. CCS-O1U with SC 6 port panel or City approved equal.
23. All Closed Circuit Television (CCTV) Cameras shall be AXIS Network Cameras Model No. Q6100-E with a Q61-E PTZ, Axis Mid-span converter, and Axis Wall-and-Pole Mount Model No. T91L61.

CONSTRUCTION NOTES:

1. Contractor shall construct Type 332 Cabinet foundation and shall furnish and install a McCain ATC 2070LX controller assembly in a Type 332 Cabinet. The controller assembly shall be housed in a Type 332 Cabinet wired for 8 phase operation, and include functions indicated on the plans. The cabinet shall include cabinet drawer assembly, and cabinet light assembly. The cabinet's Police panel shall be equipped with a connection for a traffic signal controller manual override switch. All equipment shall be on the current State of California "Qualified Products List". Only PDC load switches **will** be accepted. The Type 332 cabinet's Power Distribution Assembly shall be "Mercury free".
2. Furnish and install a dual-metered Type III-CF Service Equipment Aluminum Enclosure Only (No Steel) with the following circuit breakers:
120/240V - 100A Main
120V – 50A Metered Signals
240V – 40A Metered Lighting
Dual Type V – P.E.C.
The Type III-CF service enclosure's contact switch shall be "Mercury free".
3. Furnish and install emergency vehicle pre-emption equipment and required 4-channel discrimination equipment in the controller cabinet. Mount EVPE optical detectors on mast arm.
4. Furnish and install Type "V" PEC unit in service cabinet.
5. Furnish and install mast arm mounted sign per Standard Plan ES-7N, Detail "U".
6. Furnish and install 3" conduit with pullrope per S.C.E. requirements.
7. Furnish and install 2" conduit with conductors as shown.

8. Furnish and install #5 pull box as shown.
9. Furnish and install "Marathon" battery back-up system only. All battery back-up equipment shall be mounted in the battery back-up cabinet, not in the controller cabinet. Furnish and install battery cabinet on rear of controller cabinet and wire per manufacturer's specifications. Battery back-up cabinet dimensions shall be **56"Hx26"Wx12"D (McCain part # M34196)**.
10. Furnish and Install Ethernet switch on Din-Rail Mount with Small Form Factor Pluggable transceivers and Power Supply in communications cabinet or controller cabinet.
11. Furnish and Install fiber optic jumper (2M Duplex LC to SC) in communications cabinet or controller cabinet.
12. Furnish and Install Fiber Distribution Unit (FDU) with SC 6 port panel in communications cabinet or controller cabinet.
13. Furnish and Install a 6 strand single mode fiber optic (SMFO) breakout cable with 30' of slack in communications cabinet or controller cabinet.
14. Furnish and install fiber optic splice enclosure in "double-stacked" #6 concrete Pull Box with Fiberlyte pull box cover. A minimum of 50 foot of slack shall be provided and a minimum of 100 foot of slack where a splice is required.
15. Furnish and Install AXIS CCTV Camera on Traffic Signal Pole with wall-and-pole mount per manufacturers specifications and connect to midspan converter. Provide all patch cables and connectors necessary for communication.